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Original Articles.

RETROVERSION AND ITS TREATMENT: AN ANALYSIS OF FIVE HUNDRED CONSECUTIVE CASES AT THE FREE HOSPITAL FOR WOMEN.*

BY W. P. GRAVES, M.D.,

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ALTHOUGH retroversion of the uterus, next to plastic surgery of the vagina, is the most common condition which gynecologists have to treat, and one about which more has been written and for which more operations have been devised than any other, there are still many points of disagreement among surgeons, especially with regard to causation and treatment. It was with the hope of gaining information on these disputed issues that I have been led to investigate the subject by a study of cases operated on in recent years at the Free Hospital for Women. The method which I have pursued was to tabulate from the history of five hundred consecutive cases preceding June 1, 1906, such facts as would give information on the symptomatology, causation, nature of the operation and after-results. A letter was then written to each patient asking an answer to a series of questions covering symptomatic results of the operations, later pregnancies and present conditions, with the request also to report in person at the out-patient department.

CAUSATION.

It is of great importance that the surgeon should have an intelligent knowledge of the causation of retrodisplacements, on account of the necessity of applying the proper operation to the individual case. This subject is one of a very wide difference of opinion, and one which is frequently a matter of contention.

In order to discuss intelligently the causation of retrodisplacements, it is necessary to consider briefly the question of the supports of the uterus. The extremely complicated set of supporting structures with which nature has endowed the uterus in order to meet the extraordinary changes in size and position which it is its function to undergo, may, to all practical purposes, be reduced to comparatively simple terms. An idea of what constitutes the support of the uterus can best be appreciated during the performance of a complete hysterectomy, which consists merely of a systematic severing of the supporting attachments of the uterus.

During such an operation one becomes impressed with the fact that the uterus is supported around its middle by a diaphragm of tissue which has its ultimate support from the walls of the bony pelvis, and which has in it certain fibromuscular thickenings which are termed ligaments. There are, first, the lumbo-ovarian ligaments, which act to limit mildly the lateral antero-posterior mobility of the uterus. That they are real ligaments and have some true function is shown by the severe malposition of the uterus which they may cause when they are abnormally developed. It is, however, during embryonal life that they possess their chief function, for at that time they are the most important supporting attachments of the pelvic organs.

Next come the round ligaments, which are strong elastic structures that help to preserve the forward position of the uterus. They exert a gentle but firm and effective force to keep the uterus in its forward position resting on the bladder, their elastic nature allowing for the antero-posterior play caused by the constant change in the size of the bladder. The round ligaments have little or no office in maintaining the uterus at its physiological level in the pelvis. The broad ligaments serve to limit the lateral mobility of the uterus, and support it to a considerable extent through numerous smooth muscle fibers and elastic tissue, most highly developed along the course of the uterine vessels. We then come to the three structures of the pelvic diaphragm which are most important for sustaining the uterus in its physiological plane, namely, the uterovesical and uterosacral ligaments, and the fibromuscular vault of the vagina. The uterovesical and uterosacral thickenings of the pelvic diaphragm act as a swing to support the uterus antero-posteriorly between the sacrum and pubes. They are tough, rather inelastic bands, and are often of great strength, as is shown by the difficulty which one occasionally encounters in cutting them in operations on nulliparous women. In cutting through the vault of the vagina one encounters the last and most important tissue which maintains the uterus in its normal position, and one which is the last to give way when all other supporting structures are gone. It must be remembered that the uterus and vagina actually constitute one organ, the muscular connection between the two being very strong and of great importance. Regarding, then, the vagina as a constituent part of the uterine system, it follows that whatever supports the vagina also supports the uterus, and in my estimation the powerful attachment of the vagina to the rami of the pubes is the most important of all the supporting structures of the pelvic floor. The gradual weakening of the round ligaments may result in a partial retroversion; the gradual weakening of the uterosacral ligaments will result in retroversion and partial prolapse; and the gradual weakening of the uterovesical ligaments will result in cystocele and partial prolapse; *but when the vaginal attachment to the pubes* gives way, everything falls and procidentia results.

With this brief summary of the chief supports of the uterus, it is natural to conceive that the most obvious cause for weakening these supports, with the resulting malposition, would be the condition of pregnancy and childbirth, where all the pelvic tissues are profoundly stretched and distorted from their usual position. It is readily apparent that the heavy subinvoluted uterus, during the period of convalescence, with

* Read before the Boston Obstetrical Society, April 23, 1907.

the patient lying on her back, would have a strong tendency to overcome the damaged elasticity of the ligaments and thus result in permanent displacement. This factor as a causation of retroversion is so obvious and so universally accepted that in making my statistics I have tabulated as a result of childbirth all cases of non-adherent retroversion in women who have borne children. This class of cases of retroversion amounts to 51% and agrees with the generally accepted view that pregnancy and childbirth constitute the most common causes of retroversion.[1]

The second most common cause for retroversion found in my series is pelvic inflammation with the formation of adhesions. These adhesions originate from an infection through the tubes, as is well known, and form most commonly on the posterior surface of the pelvic organs, and have a marked tendency to draw the uterus backward into the posterior cul-de-sac. Not only is the uterus drawn backward by adhesions immediately on its posterior surface, but it is also dragged in the same direction by the adhesions which draw the tubes and ovaries deep into the posterior lateral pockets of the true pelvis. Such a retroversion may take place without the essential weakening of the supporting structures of the uterus, it being less common to find the uterus in the last degree of retroversion, a point which, as may later be seen, would have some bearing on the choice of operative treatment.

Retroversion of this kind constitutes 20% of my series of cases. The causes of pelvic inflammation which bring about this adherent condition of the uterus in a posterior position are, in the great majority of cases, gonorrhea and sepsis following miscarriage.

The third most common cause shown by my statistics is what I should term developmental. The term "congenital retroversion" is one which has long been in use, but is one which is inexact and does not take into account the period of time at which these malpositions take place. The uterus, as I have observed it in a number of dissections of full-term children dead at childbirth, is an unimportant and extremely undeveloped organ. It lies high in the pelvis, and in the cases that I have seen has been pressed and flattened against the sacrum by the pressure of the small intestines, so that conditions of retroversion, anteflexion and retrocession, which are ordinarily called congenital, cannot, at this period of life, be considered as existing. The uterus grows slowly during the early life of a child, it being extremely rare that it makes known its existence by either physiological or pathological processes. At the age of puberty, however, ensues a process of extraordinarily rapid development, and it is then that it assumes approximately the size and type of that of mature womanhood, or else, retarded in its development, either intrinsically or in association with other organs, suffers the malpositions or distortions which are ordinarily designated as congenital. Such malpositions are most commonly represented by permanent anteflexion, retroversion and retroflexion, and anteflexion combined with retroversion.

The diagnosis of a developmental retrodisplacement is, as a rule, not difficult to make, and this could be done with a reasonable degree of accuracy both by direct examination and by a study of the history and operative findings in the hospital cases that I have investigated. A large number of cases which I have classified as developmental showed unmistakable stigmata of developmental defects; for example, abnormally short posterior vaginal wall, short uterosacral ligaments, together with anteflexion and infantile character of the cervix and fundus, short lumbo-ovarian ligaments, bicornate form of the uterus, hypoplasia of one side of the uterus and congenital absence of one ovary, defective growth of the round ligaments and other interesting conditions, which leave no doubt whatever of the real cause of the retroversion. In other cases, where an Alexander's operation had been done, and the condition of the pelvis not recorded, the retroversion was classified as developmental where symptoms of severe dysmenorrhea or sacral backache had existed since the institution of menstruation. The majority of these cases were young women, usually under twenty-five, or young married women who were sterile.

No case was included in this class where there were evidences of adhesions, a point which calls to mind the prevalent belief that the uterus which has been retroverted for a considerable length of time becomes adherent. The falsity of this theory is, of course, apparent when it is considered that there is no more reason for the uterus to become adherent while lying in contact with the peritoneal surface covering the upper portion of the rectum than while in contact with the peritoneal surface covering the upper portion of the bladder. It may be added that in none of the cases to which a developmental origin could be assigned in my series, even where the patient had menstruated for twelve or fifteen years, were there any adhesions.

It is undoubtedly true that some cases of retroversion occur during the period when the uterus is developing, as a result of habitual constipation, or of keeping the bladder distended, a frequent habit among young girls. Such uteri might present no evidence of developmental defect other than a weakening of the ligaments.

I regard the consideration of this developmental type of cases as of very great importance, for it is probably true that many of the so-called acute retroversions which are regarded as so common, belong to this class.

Cases of developmental retroversion constitute 16% in my classification.

The fourth most common cause of retroversion, and occupying 8% in this series, is the displace-

[1] A certain element of error in the classification is unavoidable. For example, a woman with retroversion following childbirth, or one with developmental retroversion, may later suffer from adhesive pelvic peritonitis. In such cases a mistake might be made in assigning the cause for the retroversion. Doubtful cases of this kind did not occur with sufficient frequency to affect materially the final classification.

ment due to pressure of pelvic tumors; for example, ovarian cysts, uterine fibroids, extra-uterine pregnancy and broad ligament tumors. The pressure of these tumors exerts very little effect on the essential supports of the uterus, and it is not infrequent to see the uterus immediately assume its normal former position after removal of tumors, even of long standing. This was seen in one case where I recently removed a large pedunculated fibroid with a twisted pedicle which was growing over the frontal portion of the fundus. The uterus was retroverted backward and to the right, and firmly held there by the tumor above it, which measured six inches in diameter. The size of the tumor proves that the uterus must have been in this position for a considerable number of months at the very least. After the removal of the tumor the uterus immediately assumed a perfectly normal position. In another case where I found an enormous mass of organizing blood clot, the result of an extra-uterine pregnancy, which had existed in the abdomen for five weeks, the uterus, though held in a position of retroversion during all this period, immediately assumed its normal position after removal of the mass in the pelvis.

There is left 4% of cases for which I have been unable to make a satisfactory classification. In a few of them the histories were incomplete. Most of them were unmarried or sterile women between the ages of thirty and forty, who had non-adherent retroversion, but whose symptoms dated back for only a few years. In none of them was there any history of an accident or fall, or an acute onset. In my own opinion they would undoubtedly either fall into the class of developmental retroversion where symptoms were absent, a condition which I have not infrequently noted in young women, or be included among those individuals whom Tuffier has aptly described as possessing a physiological inferiority of tissues. Here the retroversion must be considered as a gradual process similar to floating kidneys or other visceral ptosis.

SYMPTOMATOLOGY.

The symptom complex of a typical case of retroversion is so characteristic that it is very frequently possible to make a correct diagnosis from the history alone. A woman who suffers from a constant sacral backache, ovarian pain, dysmenorrhea or profuse menstruation, and who is nervous and constipated, and suffers from frequent headaches, presents the typical history of a patient with a retroverted uterus. No one of these symptoms, however, is pathognomonic of the condition, the most nearly constant being sacral backache, which occurred in 76% of all the cases. This symptom is usually the most prominent and is the one which, as a rule, brings the patient to consult her physician.

The second most common symptom is ovarian pain on one or both sides, more frequently on the left side and occurring in 62% of the cases. Ovarian pain is probably due to a disturbance in the circulation of the ovary caused by the malposition of the uterus and a certain amount of prolapse of the ovaries, which usually takes place. Microscopically these ovaries are apt to show cystic degeneration of the follicles or subinvolution of corpora lutea. The ovary is usually edematous and is larger and heavier than normal.

Some disturbance of menstruation, though occurring in only 56% of the cases, may, nevertheless, be regarded as one of the cardinal symptoms of retroversion, together with backache and ovarian pain. This symptom also is due to a disturbance in the circulation of the uterus, and must be referred rather to a mechanical obstruction than to a faulty control of the nervous system. In developmental cases the menstrual irregularity is much more constant and usually takes the form of a dysmenorrhea, while in cases caused by childbirth the complaint more often is of too frequent and profuse menstruation, a condition which is the result of a gland hypertrophy of the endometrium.

It is a question whether constipation should be regarded as a cardinal symptom or as a referred symptom due to a general constitutional deterioration resulting from the retroversion. I am inclined to regard many cases of constipation directly due to the influence on the rectum caused by the pressure of a retroflexed fundus. Constipation appeared as a pronounced symptom in 51% of all the histories. Whether this percentage is larger than would appear in the histories of 500 women taken at random who were not suffering from any pelvic trouble I am unable to say, but the fact that 48% of these cases were either cured or greatly relieved by the operation is at least suggestive that many cases of constipation are directly due to the uterine displacement.

Seventy-one per cent gave nervousness as one of the principal symptoms, while a considerable number complained of frequent or constant headaches, usually locating the pain in the back of the head and neck. Many of them complained of headache only at the menstrual periods, and in view of the fact that a considerable portion of those suffering from headaches reported great relief or cure after operation, one should not neglect the consideration of retroversion in diagnosing the cause of headaches among women.

Viewing symptomatology from a general standpoint it may be said that women suffering from retroversion caused by childbirth are far more apt to have the symptom complex, backache being the most prominent, than are those with retroversion from other causes. The most characteristic symptom in inflammatory cases is ovarian pain, while the most characteristic symptom in developmental cases is dysmenorrhea. It is not uncommon to find young women with developmental retroversion having no symptoms whatever.

TREATMENT.

A discussion of the treatment of retroversion involves first the question whether it shall be

operative or palliative, and, secondly, if operative, a correct choice of the great number of operations which have been devised for the relief of retroversion. The treatment of the cases in my series having been operative, the question as to its feasibility can be answered by an inquiry into the anatomical and symptomatic results of the operations. Information on this point was obtained by a letter sent to each patient requesting a statement regarding her cure, relief or non-relief from the operation in general, and from the particular symptoms of backache, ovarian pain, menstrual disturbances, constipation and headache. In considering the statistics which I gathered from these letters, it must be borne in mind that only a small per cent of the operations were uncomplicated by other operations performed at the same time, as, for example, laceration of the cervix and perineum, repair or removal of the tubes and ovaries, removal of tumors, the repair of hernias, etc., so that the answer as to whether the patient was cured by her operation does not in all instances imply an answer as to whether she was cured or relieved of the condition of retroversion. Inasmuch, however, as the cardinal symptom of sacral backache occurs in the great majority of cases, the answer to the question of relief or non-relief of that symptom will give approximate information concerning relief or non-relief from the condition of retroversion.

Two hundred and sixty-three patients answered the circular letter in a satisfactory manner. Of this number 86% stated that they were either completely cured or much relieved by the operation. Considering the numerous additional operations, many of them serious ones, which complicated the operation for retroversion, this percentage must be regarded a satisfactory one, and compares favorably with those published from other hospitals. It is interesting to note that those who were entirely cured or much relieved of the symptom of backache amounted to 85%, in comparison with 86% of those cured or much relieved by the operation. This would tend to show that in the great majority of these cases, though complicated as many of them were, the retroversion was the chief cause for suffering on the part of the patient. It is also interesting to note in this connection that the anatomical recurrences of retroversion after the operation, which, as will be seen, I have approximated at 15%, corresponds closely to the percentage of patients who stated that they received slight or no relief from the operation.

Seventy per cent of those having ovarian pain, and 70% of those suffering from some disturbance of menstruation, were either cured or relieved. Forty-eight per cent were cured or relieved of constipation.

With these figures in view and in consideration of the fact that the great majority of retroversion cases are complicated by other surgical diseases any argument as to the comparative merits of treatment by pessaries or tampons is practically out of the question excepting in a few selected cases.

In the days when pessaries were the only available treatment for retroversion of all kinds, Dr. F. H. Davenport was able to accomplish satisfactory results in 31%. Although this shows that such treatment is inapplicable in the majority of cases, it nevertheless proves that pessaries should be still kept as one of the resources of the surgeon, and not be absolutely disregarded.

One must in this connection take into account the danger to life involved in the operative treatment of retroversion. The mortality in this series of cases amounts to 2, one case dying six hours after operation, from heart embolism as shown by autopsy, the other case dying from the unusual condition of general peritonitis caused by the staphylococcus albus. This last case was complicated by the removal of a very adherent appendix. In considering this excellent mortality record it must also be borne in mind that many of the operations were complicated by serious and dangerous pelvic conditions.

DISCUSSION OF OPERATIONS.

Having established then the fact that in the great majority of cases operative treatment is advisable, it remains to choose intelligently the best method of surgical procedure. It is said that as many as 52 different operations have been devised for the treatment of retroversion and this large number of operations is frequently presented as a proof of the unsatisfactory results of operative measures.

In order to gain information of value with regard to the merits of the operations employed at the Free Hospital for Women I have tabulated the number of times each operation was performed and have computed a comparative set of percentages which each operation bears to the anatomical failures. I have found, all told, 60 recurrences of retroversion after operation. This constitutes 12% of the entire series. The number has been made up both from a large number of patients whom I have personally examined from eight months to several years after operation and from entries in the hospital records made by other members of the staff. Although the Free Hospital offers very unusual opportunities for following post-operative cases, there are some cases which have never been seen after leaving the hospital, and a certain number of recurrences have undoubtedly been overlooked. With this in view I have estimated that the recurrences have probably amounted to at least 15% of the entire number.

Though numerous methods have been employed by different operators, in my series I have tabulated the results only of those operations which have been frequent enough to furnish statistics of value, and this list includes Alexander's operation, ventro-suspension, ventro-fixation, and internal shortening of the round ligaments. Alexander's operation was performed 191 times with a known recurrence of 13%. Ventro-suspension and ventro-fixation were performed 267 times with a known recurrence of 9%. Internal shortening of the round ligaments was

performed 35 times with a known recurrence of 31%.

Using these figures as an assistance, I shall now attempt to discuss the comparative merits of these operations with a view both to the anatomical derangements which they are capable of repairing and also to their symptomatic results.

Alexander's operation. — This operation was originally devised during the days of constant sepsis to avoid the necessity of opening the abdominal cavity, and was in those days, of course, a most ingenious method of avoiding danger to life and served as a great benefit to suffering womankind. Considering now that in the light of our present surgical technic the original danger, to obviate which the Alexander's operation was devised, has been so far removed as to be of little weight, the question arises, "Is the operation a sufficiently satisfactory one?" Thirteen percentage of recurrences, even though it represented the true maximum, is much too high for a surgeon to view with equanimity. This high percentage of recurrences, as I have been able to prove by my personal examinations and by the history of after results, is largely attributable to the factor which constitutes the real defect in the operation, namely, the presence of pelvic adhesions, which were not diagnosed at the preliminary examination. In many such cases, where the adhesions are not particularly dense or where there is an unusual amount of yielding tissue, to which the uterus and adnexa are attached, it is possible to draw the uterus up to a position of comparative normality for a short period of time, but the continual dragging on the back of the uterus eventually overcomes the tension of the recently shortened ligaments and the uterus reverts to its former position often before the patient leaves the hospital. Other objectionable features of the operation are hernias and sepsis. Hernias occur as a result of an unskillful performance of the operation and are sufficiently frequent to make it inadvisable for any inexperienced operator to attempt it. Sepsis in the wounds is shown by the hospital records to be of frequent occurrence and the danger of this complication has not been entirely removed, even in most recent cases performed with every precaution of asepsis.

Mechanically speaking, reduced to simple terms, the uterus by this operation is practically suspended to the abdominal wall from its two weakest points. The ligaments themselves are frequently weak and ineffective, even at their uterine attachments, as is often seen in developmental cases, while the inability of even the most experienced surgeon sometimes to find the round ligament in the inguinal canal is a not unfamiliar spectacle. Notwithstanding all these objectionable features, it must be admitted in the cases that I have examined where Alexander's operation has been successfully done the anatomical and symptomatic results have been excellent, so that in selected cases given an easily replaceable uterus and a surgeon with good technical skill the operation may be regarded as a most desirable one.

Ventrosuspension and ventrofixation. — It is necessary to consider these two operations in conjunction in this series of operations on account of the indefinite manner in which the two terms have been used. Ventrofixation in the hospital records has been used where the supporting stitch has included the *aponeurosis covering the rectus muscle*, while ventrosuspension is used where the stitch includes the peritoneum alone or the peritoneum and part of the muscle. Strictly speaking, ventrosuspension should be used exclusively when the supporting suture passes only through the peritoneum, including no other structures of the abdominal wall. As a matter of fact, in the majority of so-called ventrosuspensions performed in this series the suture was actually passed through the rectus muscle and peritoneum, and really constitutes more nearly a ventrofixation than a ventrosuspension. As it has been impossible to differentiate exactly between these two procedures, I am compelled to consider suspension and fixation under one category. There were 267 of these operations with a known recurrence of 9%. Notwithstanding the confusion existing between the two terms suspension and fixation, valuable information could be gained from a study of the recurrences as to the most efficient method of fastening the uterus to the abdominal wall. Two thirds of the recurrences in this class of cases are attributable to the method of passing the suture only through the peritoneum, and as this method has been comparatively little used, the recurrences where the suture had passed through the muscle or through the fascia would be reduced approximately to less than 5%, not an ideal, but nevertheless a fairly satisfactory, result.

As a matter of fact there is probably little anatomical difference between a skillfully done ventral fixation and a successful ventral suspension. In each there is an adhesion formed between the fundus of the uterus and the anterior abdominal wall of sufficient strength to hold the uterus forward and maintain it at its physiological level in the pelvis. The stitch itself counts for very little after the adhesion has been formed. The reason that a ventral suspension performed by merely passing a ligature through the peritoneum gives uncertain results, is because the peritoneum may be pulled into a long string without the formation of an adhesion sufficient to hold the uterus to the abdominal wall. However, in many cases such an adhesion does form and the operation remains successful. In passing a suture so as to include the muscle or fascia the formation of an efficient adhesion is much more nearly insured. The danger attending a ventral fixation is of the formation of too dense an adhesion, so as either to immobilize the uterus or to cause dystocia in future pregnancies. The surgeon in attaching the uterus to the anterior abdominal wall should bear in mind possibilities of too weak or too strong an adhesion, and the result of the operation, therefore, depends largely on his technical skill. Where the uterus has been effectively attached to the abdominal wall, symptomatic

results and results in pregnancy in the present series of cases have been excellent.

Intra-abdominal shortening of the round ligaments. — This operation was performed thirty-five times and there is a known recurrence of 31% — an extermely bad showing. Various methods were used, the most common one being that devised by Wylie. There has been also a considerable number of these cases which have been examined by me before discharge from the hospital, where the uterus was sufficiently held in a forward position, so that it could not be called a recurrence, but where, nevertheless, there existed a certain amount of sagging in the pelvis, with corresponding symptoms. Fortunately only comparatively few of these operations have been done, the results from them being either symptomatically or anatomically in the great majority of cases bad.

The following case illustrates well the experience with intra-abdominal shortening of the round ligaments, as well as that of ventral fixation.

Mrs. T., age thirty-two, two children, one miscarriage. Operated on Oct. 31, 1899. Removal of dermoid cyst. Wylie's intra-abdominal shortening of the round ligaments. At the time of discharge the uterus was reported as in the first degree of retroversion.

June 5, 1900, the uterus having become entirely retroverted, a second operation of shortening of the round ligaments was performed. The uterus, however, continued to sag, and on Jan. 22, 1901, ventral fixation was performed.

Sept, 14, 1902, the patient had a normal labor.

April 24, 1903, the uterus was in good position.

Having thus reviewed the surgical experience of the hospital in these retroversion cases, it is in order to inquire what lessons may be learned from them. Bearing in mind the fact that the uterus is essentially supported around its middle by a thick diaphragm attached ultimately to the bony walls of the true pelvis, it is obvious that in the great majority of cases there exists some defect in this main central support. It can, in fact, be shown in most cases that besides the backward displacement of the uterus, there is some sagging of the main supports. This is almost universally true in cases due to childbirth, in chronic cases of physiological inferiority, and in a number of developmental cases. It is less frequent in cases due to adhesions, and sometimes entirely absent in cases due to the pressure of tumors. It will therefore be seen that treatment in order to meet the great majority of retroversion cases must overcome this sagging of the diaphragmatic support. In order to solve this mechanical problem it is conceivable that it may be done in three different ways: first, by supporting the diaphragm from below, as is done to a certain extent by the use of pessaries; secondly, by a complicated operation which would restore each essential structure of the diaphragmatic support to its proper function, and, thirdly, by suspending the uterus from above. The first method, namely, that of using a pessary is entirely inefficient, excepting in a few cases, and can be usually disregarded. The second method of operating on the individual structures of the pelvic diaphragm has been attempted with some success, notably by Bouvé, who dissects out and restores the uterosacral and uterovesical ligaments. Even as complicated an operation as this meets only part of the requirements, and it is inconceivable that in many cases the uterus could be fully and permanently restored to its physiological level in the pelvis.

The reduplication of weakened and stretched-out ligaments is mechanically not an operation to be relied upon, as has been shown by experience in shortening the round ligaments internally, and the reason of this is that the ultimate attachments of these ligaments remain exactly as they did before the operation. These attachments have at one time proved inefficient, and it is reasonable to suppose that when the same forces again work against them the future result may be similar.

There remains then only the method of suspending the uterus from above. The only available point of permanent support is the anterior abdominal wall, and though it seems to be distorting natural anatomical relations to fix the uterus in this manner, nevertheless it has been shown by repeated experience that the abdominal wall is an admirable support to the pelvic organs. The elasticity, strength and plasticity of the abdominal wall make possible the performance of operations by which pelvic organs can be attached to it, even under great tension, without corresponding pain, bladder trouble, or symptoms of any kind, as has been shown by the repeated successful results in the operation of vaginapexy. A uterus firmly attached to the strong and elastic abdominal wall depends no longer on the diaphragmatic support of its center and lower third, and symptoms previously existing by deficiency in this support may be completely relieved. Any operation, therefore, like the internal shortening of the round ligaments which tends merely to restore the uterus to its anterior position, but which does not relieve the diaphragmatic support at all, cannot be expected to attain symptomatic results comparable with some method of attaching the uterus to the abdominal wall.

Having established this premise in our mechanical reasoning, it remains to choose the best method of suspending the uterus from above, and it is a well-known fact that the symptomatic and anatomical results attained by an effective ventrosuspension or fixation are excellent. The objections to this method, however, are, first, the long ribbon of tissue after a ventral suspension causing danger of strangulation of the bowel, and, secondly, evil results obtained in a subsequent pregnancy. The answer to the first objection would be never to perform a ventrosuspension by passing the ligature *only* through the peritoneum, for not only does the retroversion following such a procedure frequently recur, as we have seen in my cases, but it is usually only after such operations that the long peritoneal band of tissue

is formed. The second objection, namely, the danger of dystocia in future pregnancies, is a valid one and one which by no means should be disregarded.

Of the cases, ventrofixation and ventrosuspension, which answered my inquiry as to future pregnancies, 27 reported one or more conceptions, 4 of them being pregnant at the time of reporting. Six of them had miscarried, 1 of these miscarriages being known to have been induced. One reported pain in the lower abdomen during the nine months. One who was pregnant reported pain in the site of the wound. All others reported no trouble, 2 of them saying that they had had less trouble than at previous childbirths. Two had had twins. It will thus be seen that of the 26 cases of ventrofixation, the only difficulties noted were, 6 miscarriages and 2 cases with pain in the lower abdomen during pregnancy, the conception being successful in one of them. This certainly is not a bad record, especially as the percentage of miscarriages corresponds nearly to the accepted percentage of pregnancies in general, namely, 20%. There were in all 48 cases who reported conception after an operation for retroversion. Twenty-six, as we have seen, were after cases where the uterus was attached to the abdominal wall, 22 followed Alexander's operation or internal shortening of the round ligaments. None of these cases had trouble at childbirth. The case which suffered most during pregnancy was one which followed an Alexander's. This case was one whom I examined when she was about four months pregnant. She was suffering intense pain in the two inguinal regions, and though I did not see her again until after the birth of her child, which was successful, she reported that she had spent three months in a hospital suffering greatly from this same pain.

It must be admitted, however, that cases of rupture of the uterus and Cesarean section following fixation have occurred, and the surgeon should bear in mind always that he is taking this remote risk in performing the operation on a woman in the child-bearing period.

It will thus be seen from the foregoing that outside of the intra-abdominal shortening operations the surgical treatment of retroversion has by the methods which have been employed been fairly satisfactory, and with the exception of a mortality of $\frac{1}{8}$ of 1% there have been no untoward results. During the past year for ordinary cases, where it has been thought advisable to open the abdomen and where adhesions have not been too extensive, or where the pelvic diaphragm has not been too greatly relaxed, the operation usually designated as Mayo's internal Alexander has been very generally adopted at the Free Hospital. The results from this operation give excellent promise. It possesses all the advantages of Alexander's operation and most of the advantages of fixation, without the defects of either.

The operation, as is well known, is a modification of Gilliam's operation and consists in drawing the round ligaments up through the internal rings and joining them at the middle line of the abdomen above the rectus muscles and below the fascia, thus avoiding the undesirable weakening of the fascial covering which exists in Gilliam's operation.

The technic of Mayo's operation should be carefully observed and is briefly as follows: A median incision is made, the round ligament of the right side is then grasped by a pair of curved clamps at the junction of the middle and outer third. The assistant holding this clamp draws the ligament toward the median line, pulling the peritoneum at the point where the round ligament enters the abdominal wall into the form of a funnel. A pair of curved clamps with narrow blades is then inserted between the fascia and rectus muscle of the right side and pushed directly to the internal ring and down into the funnel of peritoneum, formed by the traction of the round ligament. It is then pushed along the course of the round ligament still underneath the peritoneum and made to grasp the ligament at the point where the other clamp holds it. The ligament is then drawn up through the internal ring and out to the median line under the fascia, the clamp at no time entering the peritoneal cavity. This procedure is then carried out on the left side and after the peritoneal wound is closed in the median line the two ligaments are drawn together over the rectus muscles and united by several interrupted sutures. The operation is a simple one to perform. It has been done many times at The Free Hospital for Women and the results so far have been universally excellent.

To summarize, then, my conclusions, with regard to treatment, I would make the following statement:

In a case where the uterus can be easily replaced and will remain in position and there is no necessity of inspecting the abdominal cavity, Alexander's operation may be recommended. Where it is desirable to open the abdomen and where there are no excessive adhesions and no marked relaxation of the diaphragmatic support, Mayo's internal Alexander is the operation of choice. In cases of many adhesions and marked retroflexion, or with much sagging of the diaphragmatic support, the uterus should be attached to the abdominal wall in a manner so that it will stay, the exact method of attachment being a matter of choice by the individual surgeon, the question of future childbirths never being disregarded. Attachment of the uterus to the abdominal wall by a suture merely through the peritoneum is an inefficient method of ventral suspension. Intra-abdominal shortening of the round ligaments is an inefficient treatment for retroversion.

Prolapse and procidentia. — The subject of prolapse and procidentia is so closely related to that of retroversion that it is necessary to mention it in a discussion of this subject. In these cases, as has been pointed out, the pelvic diaphragm has partially or completely lost its integrity as an element of support. It has been shown that the only efficient substitute for this

support is, primarily, firm suspension from above, and that the only available point of suspension is the anterior abdominal wall. In cases of extreme procidentia the operation of vaginapexy, devised by Dr. William H. Baker, the operation of colpo-orrhaphy devised by Dr. Polk and similar ones by Dr. Crile and others, where the vagina itself is fixed to the anterior abdominal wall, have entirely revolutionized the eventual success attending operations on these conditions. This subject is, however, so important as to require special study and is mentioned here chiefly to emphasize the use to which the anterior abdominal wall may be put in supporting the pelvic organs.

NEURALGIA OF THE SUPERIOR MAXILLARY NERVE.

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A PERIPHERAL OPERATION TO REACH THE DENTAL BRANCHES.

NEURALGIA of the trifacial nerve is of common occurrence, but only in the very chronic and severe cases are all the branches involved. For a period, at least, the pain is referred to one of the divisions and, perhaps most commonly, to the superior maxillary nerve. In a small majority of the cases a definite cause may be found, such as some general disease, — malaria, diabetes mellitus, etc., or there may be a definite local lesion, — scar tissue, exostoses pressing on nerves in bony canals, some dental inflammation, an undescended tooth, etc. Occasionally, the exciting cause may be some lesion in a region supplied by branches of the fifth nerve. A definite neuritis may exist. On the other hand, in the great majority of these cases the cause is not evident and on subsequent examination of the excised nerve nothing pathological is found.

This paper will consider only the second or superior maxillary division of the fifth nerve for the purpose of suggesting a method of intercepting the nerve supply of the teeth of the upper jaw when these branches are involved and it is desired to resort to one of the so-called peripheral operations.

Anatomy. — The second division leaves the skull by the foramen rotundum to reach the spheno-maxillary fossa. Here are given off several branches, viz., the temporo-malar passing into the orbital fossa to be distributed eventually to the malar and temporal regions, the branches to Meckel's ganglion and the posterior dental nerves. The latter go forward to reach the posterior aspect (zygomatic surface) of the superior maxilla. There are two or three trunks which give off filaments to the gums and adjacent portion of the cheek and then enter the substance of the maxilla, passing through bony grooves and, eventually, through canals to reach the roots of the molar teeth; terminal branches pass forward to help form a plexus with branches of the middle and anterior dental nerves.

The main trunk of the superior maxillary nerve passes through the sphenoidal fissure into the orbit and thence through a bony canal on the floor of the orbit to make its exit at the infra-orbital foramen. Dental branches are given off in this canal. If there are any middle dental branches they pass outward and downward in the wall of the maxilla to reach the bicuspid teeth; if absent, these teeth are supplied from the plexus formed by the anterior and posterior dental nerves. Just before the main nerve emerges from the infra-orbital foramen it gives off the anterior dental nerve which enters a minute canal and passes through the substance of the maxilla to be distributed to the canine and incisor teeth and backward to complete the dental plexus. There may be two minute ganglia on this plexus.

After emerging from the infra-orbital foramen the main trunk terminates in its final branches of distribution, — the labial, nasal and palpebral nerves.

The main trunk of this nerve is readily accessible for a considerable distance into the orbit and, although the anterior dental nerve be cut off, the posterior dental nerves remain intact and through the dental plexus there would still be communication with all the teeth. The desire to intercept all the dental nerves without resorting to the more serious and disfiguring operation of reaching the nerve in the spheno-maxillary fossa was the occasion of devising the method described below.

Treatment. — Drug treatment for neuralgia which persists for any considerable period is discouraging. Acute attacks of neuralgia are not uncommon, and these tend to disappear permanently upon the removal of some obvious cause, such as exposure to cold, errors in diet, etc. The cases due to specific organisms disappear under special treatment. But the chronic recurring attacks yield only temporarily to drugs until finally nothing medicinal seems to afford relief. The benefit from electricity is doubtful and rarely lasting, while massage generally does harm. Occasionally some definite local cause is discovered, such as a lesion in the nose, pressure on a nerve trunk, or disease of the teeth, and the removal of such cause is followed by permanent relief.

In the majority of cases, however, no cause can be found, and eventually no drug treatment gives relief. The suffering is so intense that the patient consents willingly to surgical intervention and some sort of an operation is the ultimate outcome.

There are two general types of operation, the peripheral and the central. The former has to do with excision of some portion of the main trunk or its branches distal to the foramen rotundum; the latter is an intracranial operation whereby the nerve trunk and a part or the whole of the gasserian ganglion are removed.

There are several methods of approaching the nerve at the infra-orbital foramen so as to remove more or less of the main trunk, even as far back as the spheno-maxillary fissure. All these methods destroy the anterior dental nerve, for this is given off just before the main trunk leaves this foramen, but none of these superficial operations

destroy the middle and posterior dental nerves. If the pain were limited to the facial distribution these methods would be satisfactory, but if it were referred only to the teeth relief would not follow.

The superior maxillary nerve can be reached in the spheno-maxillary fossa by going in laterally through the temporal fossa. Thus all the dental branches can be intercepted. This is an extensive operation and is followed by a large scar and muscle atrophy. Its performance calls for considerable skill. Furthermore, it is wiser to have recourse to the simpler methods first, for temporary and sometimes permanent relief may follow.

The intracranial operation consists in the removal of the whole or part of the gasserian ganglion, together with one or more of the primary divisions of the trifacial nerve. It is an operation of last resort and properly so at present, because it is difficult to perform, there is a considerable mortality, and, although immediate and permanent relief from pain follows if carried out properly, unfortunate sequelæ occasionally result. The intracranial operation does not concern us here.

The following method has been devised for relief when the dental branches are the seat of pain. First, the teeth should be examined by a competent dentist, and if found to be sound they should not be extracted. A horizontal or somewhat oblique incision about one inch long should be made over the exit of the nerve from the infra-orbital foramen and carried down to the bone. The nerve should be exposed at the foramen and with care the vessels may be spared injury, for a time at least, so as to avoid obscuring the field by hemorrhage. Free the cutaneous branches for a distance and carefully isolate the main trunk. With a small chisel remove the bridge of bone which completes the foramen above and also chisel away a considerable portion of bone below the foramen without injuring the nerve. Elevate the periosteum from the facial surface of the maxilla downward and outward towards its malar process and then continue under it so as to reach the zygomatic surface. Previous to this the antrum has been opened in front. With rongeur forceps a channel should be made in the facial wall of the maxilla extending downward and outward to a point just under the malar process, and thence as far as possible on the zygomatic surface. By means of suitable retractors and properly curved rongeur forceps this procedure offers no difficulties. This channel should be from three-eighths to one-half inch wide. Thereby all dental branches are intercepted. The bony support of the alveolus is not materially weakened, the teeth are not injured, nor is any harm done the antrum. Finally the main nerve trunk should be carefully isolated to the spheno-maxillary fissure where it is severed and then as much as possible of the cutaneous distribution teased out. All hemorrhage will have ceased on completion of the operation so that the incision should be closed with a subcuticular suture. The usual edema of the cheek will follow and last about seven days.

All of this operation can be carried out by means of an incision inside the mouth which exposes the canine fossa. The technic is a little more difficult in this method, but an external scar is avoided. This plan was used in Case II for the purpose of reaching the dental nerves. There had been a previous operation in this case and the facial distribution with a portion of the main trunk had been excised, but the neuralgia persisted in these nerves.

The only claim made for this operation is that cases of neuralgia of the superior maxillary nerve, in which pain is referred to the teeth as well as to the face, can be relieved by a superficial route. The ultimate chance of recurrence may not be altered, but if freedom depends upon the amount of nerve excised the outlook is favorable. If further intervention is called for only the intracranial operation will avail much.

CASE I. A woman, fifty years of age. For two years she suffered from neuralgia of the superior maxillary nerve. Not only were all the facial branches affected but also the branches to all the teeth on one side. She was opposed to any operation and tried innumerable drugs and other measures without any lasting relief until finally the pain became so severe and persistent that she submitted willingly to operation. Most careful examination by specialists failed to show any cause in this case. The first and third divisions had never been affected, and for various reasons I did not care to approach the nerve in the spheno-maxillary fossa. I was doubtful how best to relieve the pain referred to the teeth and finally decided to remove portions of the facial and zygomatic surfaces of the maxilla. The operation was performed in the manner described above. No complications followed; relief was immediate and there has been no recurrence in a period of ten months. The scar on the face is scarcely perceptible.

CASE II. A man, forty-five years old. This patient had been operated on elsewhere for neuralgia of the superior maxillary nerve. Both the facial and dental branches were affected. He states that following this operation the pain left the face but always persisted in the region of the teeth and gums although several teeth had been extracted. The operation performed was excision of the main trunk for a distance in the orbit together with the cutaneous branches. Only a small scar was evident.

I decided that I would intercept the dental branches by incision through the mouth in the manner described. Accordingly, a horizontal incision about one inch long was made across the canine fossa at the highest part of the vestibule of the mouth. The infra-orbital foramen was sought and found not to contain any nerve tissue. After freeing the periosteum the bony wall of the maxilla was removed well on to the zygomatic surface. The incision was left open and it closed of itself in about four days without complication. Complete relief followed and patient has not been seen since his discharge from the hospital.

THE Medical College of Ohio graduated one Egyptian student this year, and two students from that country last year. The Cincinnati College of Pharmacy graduated this year two Egyptians, and there are at present four residents of that country at the Medical College of Ohio.—*Jour. Am. Med. Asso.*

"ORGANISM X," PROBABLY OF THE CORYNEBACTERIUM GROUP: ITS DIFFERENTIATION FROM B. DIPHTHERIÆ AND ALLIED ORGANISMS. ITS PATHOGENICITY IN MAN, ESPECIALLY IN BRONCHOPNEUMONIA, AND ITS RELATION TO GENERAL PARALYSIS OF THE INSANE.

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ARTICLE NO. 1 — INTRODUCTORY.

As this work has already consumed a long time,[1] but as still more work seems necessary before recording a final opinion, I take this occasion, omitting here its systematic study, to present briefly such data as bear more particularly upon the differentiation of this organism, besides indicating in a general way such topics as I wish to consider subsequently. I shall omit a consideration of the literature in this introductory article and shall, for the present, call the bacillus of this paper "Organism X" for convenience.

SOURCE OF DATA ON ORGANISM X.

The bacteriological data here presented comprise: (*a*) One clinical case of pulmonary infection with organism X; (*b*) a bacteriological and pathological study of 150 insane patients coming to autopsy; (*c*) a bacteriological study of 2,310 throat cultures on blood serum from 1,000 insane (these during a mild diphtheria epidemic); (*d*) comparative study on 6 sugars of acid production and coagulation in blood-serum-water-litmus-sugar media of Bacillus diphtheriæ, organism X and bacillus Hoffmanni by means of 175 observations; (*e*) comparative study on 7 sugars of acid production in broth of B. diphtheriæ, organism X, B. xerosis, B. Hoffmanni and Ruediger's bacillus, by means of 517 titrations with controls; and (*f*) a study of cultural and morphological characteristics based upon a stock of 199 pure cultures of the "diphtheroid" group, which includes:

Cultures of Organism X,	146
" " B. diphtheriæ from Danvers epidemic,	17
" " B. pseudo-diphth. (B. Hoffmanni),	4
" " B. xerosis,	3
" " B. coryzæ segmentosus,	1
" " Ruediger's organism (from Dr. Hamilton),	4
" " a media-staining pseudo-diphth. bacillus,	1
Other forms not identified, largely falling into one or other of these groups,	23
Total stock of diphtheria and diphtheroid organisms,	199

The organism I call here "Organism X" I regard as a distinct bacteriological entity; what I record deals with but one species; in short, I have temporarily designated the bacillus Organism X to avoid confusion in terms, and because as yet I have been unable to find an adequately described and unquestionably differentiated and named species which seems identical with Organism X, but eventually I shall doubtless be able to place the organism. Descriptions, etc., on Organism X are based on cultures of the bacillus, which have been studied with care with regard to morphology, cultural peculiarities, biochemical reactions and animal inoculation, and over an extended period of time. This has been absolutely necessary, because Organism X may so closely resemble in a single point (morphology or other feature) B. diphtheriæ, B. xerosis, B. Hoffmanni or B. coryzæ segmentosus as to be indistinguishable from each in a given respect.

SOURCE OF CULTURES OF ORGANISM X.

Organism X has been found and obtained in pure culture on blood serum:

From the throat,	62 times
" " lung,	48 "
" " pleural cavity (empyema),	6 "
" " larynx,	4 "
" " ear[2] (suppurative),	4 "
" " esophagus,	3 "
" " heart's blood,	3 "
" " eye,	2 "
" " stomach,	2 "
" " spleen,	2 "
" " liver,	1 time
" " kidney,	1 "
" " brain,	1 "
" " sputum,[2]	1 "
" tonsil pus,	1 "
" cancer pus,	1 "
" tuberculous glands of the neck,[3]	1 "
" tuberculous abscess,[3]	1 "
" contused and lacerated wound,[3]	1 "
" osteomyelitis,[3]	1 "

It may be said that the lung has proved the most productive region for this organism, especially as regards purity of culture; in several cases I have obtained pure cultures directly from the lung, and again many times the first culture from the lung showed a predominance of colonies of Organism X, but with those of the common organisms as well. For the internal organs and heart's blood the same may be said, — the initial cultures have sometimes shown a pure growth of Organism X, sometimes a mixed growth.

Then I have a few cases showing great growth of the bacillus in the lung and either pure or mixed growth of the same in the internal organs or heart's blood; and always, with one exception, when appearing in the throat, it was found in the lung where examination was made.

For these reasons I regard the lung as the important seat of action. But I am satisfied the normal lung at autopsy is not a likely source for cultures. Lungs showing marked bronchopneumonia, often somewhat peculiar in the gross, both

[1] My first pure culture of this organism I isolated while on service at the Danvers Insane Hospital in March, 1904; many subsequent cultures and other forms of "material" were obtained there also, and I want to thank the Superintendent, Dr. Charles W. Page, the Trustees, and my fellow physicians of the staff of the Danvers Insane Hospital for their interest and co-operation in this work, and particularly am I indebted to Dr. A. M. Barrett, pathologist to the hospital at that time.

Of others who have assisted me I desire especially to thank Dr. Theobald Smith for his aid and advice, and Burt R. Rickards, director of the Boston Board of Health Laboratory, for his many favors.

[2] During certain studies of diphtheria-like organisms in sputum which are in progress under Mr. B. R. Richards, he has stated to me that among others he has isolated organisms from the sources indicated which respond to many of the tests and are probably identical with "Organism X."

[3] The above four cultures are the only ones appearing above not isolated by me; they were sent to me through the kindness of Dr. D. H. Bergey, of the University of Pennsylvania, under the name of "Bacterium Pseudo-diphtheriticum." They have been proved by me to be identical with Organism X; therefore I interpolate them here. See table.

early and late, with associated gangrene, have in all cases yielded the most positive results, and in such the internal organs or heart's blood were sometimes found to yield cultures, not infrequently pure, of this organism. Suppurations have yielded good growths of the organism also.

It has been found associated in the same case, the same site and culture with many common pathogenic and saprophytic bacteria; also with B. diphtheriæ; one such case is that from which culture No. 1 (B. diphtheriæ) and No. 2 ("Organism X") were isolated by me from a throat in 1904.

I have found Organism X at autopsy both in the general paralytic and in those presenting no definite symptoms of general paralysis.

MORPHOLOGY ON BLOOD SERUM OF ORGANISM.[4]

Very variable as to size and type. Commonly a small bacillus, rarely showing suggestion of rudimentary branches like B. diphtheriæ. Organism X, in culture, does not usually reach the average size of B. diphtheriæ. Small types are sometimes much smaller than B. Hoffmanni and often coccoid. Large types as large as medium-sized B. diphtheriæ. Shape: straight rods, slightly curved rods, conical like B. Hoffmanni, or coccoid. Involution types common, smaller than similar B. diphtheriæ types, but may be ten or twenty times the volume of their fellows, often "pear," "club" or huge "coccoid" in form. Arrangement either strictly palisade or in open "V" or "jackstraw," the latter less marked than with B. diphtheriæ. Relative dimensions like typical but diminutive diphtheria bacilli or often more thick and short. Granulation variable; this runs by strains very persistently, some strains mostly of small bipolar bacilli, others practically free of granules. A conspicuous type has well-defined large (relatively) bipolar and body granules, or with a single body or polar granule; body often very pale, in marked contrast with granule or granules. Barred or closely granular and even streptococcoid types are not rare.

STAINING.

Young individuals stain well with common stains. Old forms paler than corresponding B. diphtheriæ types. Here again certain strain peculiarity exists. Stains by Gram usually. Some strains are very pale with Gram, however. Involution types retain Gram better; they may be the only individuals in a "field" which unquestionably are Gram-stained when a counter stain is used. Granular types stain like B. diphtheriæ by Neisser's method; granules are usually smaller, however.

Non-capsulated; sometimes a non-staining interval between the sides of adjacent bodies in closely packed "fields" is seen.

No spores have been seen.

Motion: Non-motile, sometimes exhibits active Brownian oscillation, however.

[4] Morphology in tissues here omitted, to be treated in subsequent article.

The organism is an aërobe.

No gas production observed on glucose or saccharose broth in fermentation tube.

GROWTH.

Blood serum: More moist, more creamy and rapid in growth than B. diphtheriæ. Under good conditions of growth on blood serum most strains show, after a few days, a decided pale salmon pink tint; when old, often faint buff. Rarely, under bad conditions of growth, a yellow or a buff. The salmon pink is sometimes pronounced and is common in vigorous cultures. Media not usually stained until growth is very old.

On potato the faint salmon pink or salmon buff is readily seen.

Agar: More rapid than B. diphtheriæ and more moist, usually gray, sometimes dirty gray, and sometimes very faintly salmon tinted.

Gelatin not liquefied. Growth slow; very fine, disseminated, spherical, in depths. Surface growth dry, yellowish, elevated.

Broth: Grows well in plain or sugar broth. Marked turbidity with or without pellicle or marginal ring growth; usually the latter is present.

In glucose broth, produces marked acid formation as intense as is the case with B. diphtheriæ.

PATHOGENESIS.

Commonly non-pathogenic in the usual sense of the term to guinea-pigs, rabbits and white rats in ordinary doses. I have seen, however, decided local purulent infiltrations follow subcutaneous inoculations of the organism in guinea-pigs, in two cases followed by death. From such, "Organism X" has been recovered apparently in pure culture from the local lesion and a neighboring lymph node. I speak guardedly on this subject, as it requires further investigation.

DIFFERENTIATION OF ORGANISM X.

As the bacillus closely resembles B. xerosis, B. diphtheriæ, B. Hoffmanni and B. coryzæ segmentosus, its differentiation is somewhat difficult. In 1904 I differentiated the organism in question from B. diphtheriæ by means of serum-water-sugar-media of Hiss. I found the same characteristics to be shown much better by direct titration of sugar broths, a method recommended to me by Dr. Theobald Smith. Therefore I offer in tabular form my results with this method on the differentiation of Organism X from B. diphtheriæ, B. xerosis, B. Hoffmanni and the organism of Ruediger.

The sugar broth used for acid production in the table below contained .95% of sugar in a bouillon made up with Liebig's meat extract. One half cubic centimeter of a 20% solution of each of the following sugars — dextrose, saccharose, lactose, maltose, dextrin, mannite and inulin — was placed in sterile test tubes and sterilized by steaming sixteen minutes. To this 10 cc. of a filtered sterile sugar-free broth (rendered so by a growth of "bird colon" bacillus at 37.5° C. for eighteen hours) was added to every tube already containing

FERMENTATION TABLE SHOWING ACID PRODUCTION IN 84 HOURS AT 37.5° C. ON VARIOUS .95% SUGAR BROTHS OF "ORGANISM X," BACILLUS DIPHTHERIÆ, BACCILLUS XEROSIS, BACILLUS PSEUDO-DIPHTHERIÆ (HOFFMANN'S BACILLUS), RUEDIGER'S BACILLUS, AND OTHERS.

Figures indicate acidity in % "normal" acid or alkali of the several inoculated suger broths under appropriate columns. Initial reaction of media .6% +. Sign + means acid; sign — means alkaline.

	Private Culture Number	Source	.95% Glucose Broth	.95% Saccharose Broth	.95% Lactose Broth	.95% Maltose Broth	.95% Dextrin Broth	.95% Mannite Broth	.95% Inulin Broth
Organism X.	2	Throat	4.8 +	4.4 +	.4 +	3.30+	.85+	.3 +	.35+
	3	Kidney	4.3 +	4.75+	.4 +	3.30+	.8 +	.4 +	.5 +
	5	Lung	4.0 +	4.70+	.25+	3.45+	.75+	.2 +	.25+
	6	Liver	4.05+	4.8 +	.7 +	3.4 +	1.0 +	.00+	.6 +
	9	Sputum	4.7 +	4.8 +	.45+	3.0 +	.6 +	.45+	.45+
	13	Lung	4.7 +	4.8 +	.25+	3.4 +	.5 +	.1 +	.25+
	37	Throat	4.7 +	4.8 +	.35+	3.4 +	.6 +	.2 +	.5 +
	38	Throat	4.65+	4.50+	.15—	3.5 +	.7 +	.2 +	.05+
	48	Lung	4.80+	4.5 +	.2 +	2.8 +	.6 +	.35+	.05—
	50	Throat	5.0 +	4.95+	.3 +	3.05+	.8 +	.2 +	.1 +
	70	Lung	4.25+	4.7 +	.15+	3.35+	.7 +	.00+	.25+
	72	Lung	4.2 +	4.7 +	.1—	3.1 +	.6 +	.4 +	.2 +
	81	Lung	3.2 +	4.85+	.3 +	3.5 +	.8 +	.5 +	.6 +
	86	Lung	4.20+	4.7 +	.4 +	3.4 +	.85+	.2 +	.45+
	97	Lung	5.0 +	4.8 +	.2 +	3.75+	.6 +	.3 +	.1 +
	99	Lung	3.2 +	4.40+	.6 +	3.4 +	.85+	.35+	.65+
	124	Heart's Bl.	4.7 +	4.30+	.12+	3.25+	.65+	.1 +	.25+
	135.47	Lung	4.65+	5.00+	‡	3.00+	1.5 +	.25+	.15+
	135.68	Brain	4.7 +	4.85+	.1 +	3.35+	.05—	.1—	.05+
	A 1025 Pl.	Empyema	4.65+	4.75+	‡	3.4 +	.65+	.4 +	.25+
	A 1037 R.L	Lung	4.8 +	4.75+	.0 +	3.45+	.65+	.15+	.2 +
	A 1041 R. Pl.	Empyema	4.45+	4.75+	.75+	‡	‡	.1 +	.05—
	A 1044 R. eye	Eye	5.05+	5.40+	‡	3.2 +	.7 +	.6 +	.45+
	"Bergey 6"	Note W	4.65+	4.6 +	.3 +	3.6 +	.95+	.8 +	.35+
	"Bergey 7"	Note X	4 15+	4.7 +	.7 +	3.3 +	.7 +	.8 +	.4 +
	"Bergey 34"	Note Y	4.15+	4.1 +	.2—	3.2 +	.55+	.2—	Broken
	"Bergey 68"	Note Z	5.25+	4.35+	.25+	3.10+	.75+	.15—	.55+
B. Diphtheriæ	1	Throat	4.9 +	.9 +	.8 +	4.35+	2.15+	.75+	.85+
	18	Lung	4.25+	.0 +	.65+	4.7 +	3.1 +	.5 +	.9 +
	22	Throat	5.00+	.65+	.7 +	4.75+	3.4 +	.7 +	.85+
	66	Throat	4.65+	.75+	1.2 +	4.8 +	1.9 +	.85+	.65+
	95	Throat	5.70+	§	.6 +	5.0 +	2.15+	.8 +	.65+
	96	Throat	¶ .60+	.9 +	¶.6 +	¶.6 +	¶.6 +	¶.6 +	‡
	108	Eye	4.25+	.5 +	.8 +	5.05+	2.9 +	.5 +	.8 +
	111	Throat	3.00+	.45+	1.3 +	3.4 +	2.0 +	1.3 +	.85+
Pr. Xer. osis.	2131	Eye	3.4 +	.25+	.05+	2.9 +	.5 +	.00+	.1 +
	"Bergey 7"		3.4 +	.1 +	.0 +	2.8 +	.55+	.1 +	.1 +
	B. Hoff- 61	Throat	.25+	.1—	.1—	.4 +	.25+	.00+	.00+
	manni 133	Throat	.1—	.05—	.4—	.45+	.1 +	.00+	.15—
	B. Hoff- 131	Throat	.6 +	.55+	.15+	.9 +	.6 +	.1 +	.3 +
	manni (?) 27	Throat	.6 +	.45+	.4 +	1.00+	.4 +	.3 +	.4 +
(?)	4	Throat	4.1 +	.5 +	.6 +	2.85+	1.1 +	.3 +	.4 +
	"Ruediger 4"		.0 +	.2 +	.2 +	.2 +	.1—	.55+	.2—
	"Reddington"	Eye	¶6 +	.5 +	.7 +	1.05+	¶6 +	.7 +	¶6 +
(?)	"Q.L.N."	Nose	4.65+	4.85+	.95+	3.45+	2.55+	2.4 +	.85+
	Controls †	I+S	.6 +	.5 +	.6 +	.....	.....	.....	.....
		NI+S	.....	.....	.....	.6 +	.....	.....	.....
	Not inoculated	NI+NS	.6 +	.....	.....	1.05+	.85+	.....	.6 +
			.....	.....	.....	1.00+	.6 +	.....	.6 +
		NI+B	.....	.....	.....	.9 +	.....	.....	.6 +
			.....	.....	.....	.75+	.....	.....	.....

† = Sterile controls, not inoculated, titrated with and without previous incubation and steaming, are indicated thus:
†I+S Incubated 84 hours and steamed 16 minutes before titration.
† NI+S Not incubated but steamed 16 minutes before titration.
† NI+NS Not incubated and not steamed before titration.
† NI+B Not incubated but boiled three minutes before titration.
NOTE W "Tuberculous glands of neck."
" X "Tuberculous abscess."
NOTE Y "Contused and lacerated wound."
" Z "Osteomyelitis."
‡ Contaminated.
§ Contaminated. Earlier titration figures of culture No. 95 ran very close on saccharose to those produced by No. 108 on the same sugar.
¶ = No growths, broth absolutely clear. (Such are useful as controls, as conditions of growth, titration, etc., have been exactly the same as for inoculated cultures.)

sterile sugar solution. The tubed media were at once steamed in an "Arnold" for sixteen minutes, and after remaining for a period of fourteen hours at about 22° C., they received a final steaming for sixteen minutes. They were planted within two days, and all tubes were subjected to the same conditions of growth.

After eighty-four hours at 37.5° C. the cultures were steamed in an Arnold for sixteen minutes in convenient lots and rapidly titrated without agitation after the usual method in volumetric work, except that the above steaming was substituted for boiling. Indicator, Phenolphthalein. Initial reaction of all media .6 +.

Four of the cultures of B. diphtheriæ appearing in the table were obtained from patients of the institution during a mild epidemic of diphtheria there. Diphtheria bacillus culture No. 108 was obtained in nearly pure culture from the eye of a patient exhibiting marked local clinical signs of xerosis conjunctivæ, while previously and subsequently the eye yielded abundant cultures of true B. xerosis; No. 2131 is one of these.

FERMENTATION TABLE SHOWING ACID PRODUCTION IN EIGHTY-FOUR HOURS AT 37.5° C. ON VARIOUS .95% SUGAR BROTHS, OF "ORGANISM X," BACILLUS DIPHTHERIÆ, BACILLUS XEROSIS, BACILLUS PSEUDO-DIPHTHERIÆ (HOFFMANN'S BACILLUS), RUEDIGER'S BACILLUS AND OTHERS.

The table needs no explanation; bacillus Hoffmanni I use as synonymous with the term "pseudo-diphtheria bacillus." Of the B. xerosis cultures, 2131 has been referred to. It is well, however, to state that it always gave the dry, granular, clinging and friable surface growth on solid media which is so typical of B. xerosis; the same characteristic was shown even in the water of condensation and liquid media. Culture "Bergey No. 7," which was also typical in all respects, was obtained through the courtesy of Dr. Bergey. Of the cultures of B. Hoffmanni, two, Nos. 131 and 27, were not absolutely typical but probably they are correctly placed. "Ruediger 4" is one of Dr. Ruediger's organisms sent me by Dr. A. Hamilton.

Analysis of the table shows marked differences in the groups included. Organism X ferments glucose and saccharose rapidly and to the same degree, each reaching in eighty-four hours anacidity of from 4.+ to 5.+. On maltose inoculated with Organism X the medium rises to 3. or 4. acid; little effect on the other sugars is produced by "Organism X."

B. diphtheriæ produces in eighty-four hours from 4. to 5. acid on glucose and maltose broth, also rises to 2. or 3. acid on dextrine broth, but shows no ability to ferment the other sugars to practical degree.

B. xerosis rises in this time to about 3.4 acid on glucose and about 3.+ on maltose, but fails to produce acid on the other sugars, including saccharose.

B. Hoffmanni and Ruediger's bacillus fail to ferment even glucose.

"Organism X" is then clearly differentiated from B. diphtheriæ by its ability to ferment saccharose with just as much ease as it ferments glucose, while B. diphtheriæ, B. xerosis, B. Hoffmanni and the bacillus of Ruediger are incapable of attacking saccharose to any marked degree. I therefore regard the differentiation of Organism X from these organisms as demonstrated.

Another organism closely resembling in morphology, etc., "Organism X" is B. coryzæ segmentosus. This organism (culture "Reddington") failed to grow satisfactorily in the plantings for the table already presented, but can still, I believe, be distinguished without uncertainty from "Organism X." "Organism X" is a hardy organism growing much better and faster than B. coryzæ segmentosus, which grows slowly with much smaller, less conspicuous colonies, which die out readily if not watched. B. coryzæ segmentosus is said to produce acid on saccharose, to less degree, however, than Organism X, and it should not, I think, be mistaken for the latter.

CONCLUSION.

"Organism X" resembles closely certain members of the corynebacterium group. Having failed thus far to more satisfactorily identify this organism, I offer, omitting here lesser peculiarities, for the organism temporarily designated "Organism X," the following major differential characteristics: (1) "Organism X" ferments rapidly and to like degree both glucose and saccharose broth (.95% sugar broth as prepared by me, rises from .6+ to 4.+ to 5.+ in either sugar in eighty-four hours at 37.5° C.). (2) Commonly under good conditions of growth on coagulated blood serum of about .5+, if not subjected to conditions inimical to pigment formation in general, "Organism X" produces a pigment of a faint salmon pink color which does not stain the media until after weeks or months. This appears in two to four days under favorable conditions. In very old cultures the pink is replaced by buff. Very rarely yellow is produced, but only after the salmon pink has been seen in previous generations for months, and then under unfavorable conditions. The tendency of transplants from such cultures, if started under good conditions, is to regain the power of producing a faint salmon-colored pigment.

The above characteristics differentiate "Organism X" from B. diphtheriæ, B. xerosis, B. pseudo-diphtheriæ (B. Hoffmanni), B. coryzæ segmentosus and from Ruediger's bacillus.

"Organism X" has been found by me a number of times at autopsy as well as during life, both in pure culture and mixed, in various pathological lesions and also when not associated with local disease. It has been found conspicuously in the bronchopneumonic lung in the insane, both in general paralytics and in non-general paralytics. It has been found in the internal organs and heart's blood at autopsy, but in such it has occurred in great numbers in the bronchopneumonic lung and associated empyema of the same case, when the latter complication existed. It has been found during life in pure culture in sputum from a

patient who showed such clinical signs as are consistent with the common post-mortem findings of other cases; when such clinical signs of purulent bronchitis and bronchopneumonia ceased, the common flora of the mouth could alone be seen in cultures, and "Organism X" appeared to be absent in the little mucus that could be raised from the upper air passages by coughing and gagging. I have found it in suppurating conditions elsewhere than in the respiration system.

Therefore I regard Organism X as a factor in disease, especially as at this time so much is heard of the rôle of "diphtheroids" in this and that condition. It is my desire to present later some evidence bearing on the rôle of Organism X in man, particularly its significance in bronchopneumonia and its occurrence in the general paralytic. Likewise, after considering the literature of diphtheria-like organisms, etc., I hope to offer some statistics on the "diphtheroids" in the throats of the insane.

PAINLESS LABOR. REPORT OF A CASE DUE TO A DESTRUCTIVE LESION OF THE SPINAL CORD.*

BY E. W. TAYLOR, M.D., BOSTON.

CASES of painless labor, due to lesions of the central nervous system, are sufficiently unusual to warrant report. Such cases occur but seldom either in the experience of obstetricians or pathologists, and, therefore, may be regarded as of theoretical rather than practical interest. As a matter of fact, gross destructive lesions of the spinal cord during pregnancy serve as a physiological experiment, the significance of which should not be overlooked.

The case which has suggested the presentation of this subject before this society has already been reported at length in its various clinical and pathological details.[1] In this report the course and termination of pregnancy were alluded to as incidents in the process which was more particularly under consideration. I shall, therefore, not attempt to give the history of the case again in detail, except so far as it relates to the matters now under consideration.

The patient was a woman of twenty-four whom I first saw toward the end of her first pregnancy. She was at that time suffering from a beginning paralysis of the legs, together with sensory and sphincteric disorder, which within a few days developed into a complete motor and sensory paraplegia extending to a point about midway between the umbilicus and the pubes. The evidence from the clinical signs was conclusive that there was a complete transverse destructive lesion of the spinal cord involving the entire lumbar region. Under these conditions of complete motor and sensory paralysis of the lower extremities the baby was born.

Dr. J. C. Hubbard was in charge of the patient at this time, and up to Jan. 13 had noticed nothing exceptional in the course of the pregnancy. The severe character of the underlying lesion of the central nervous system overshadowed the obstetrical condition. On Jan. 13 a routine examination by Dr. Hubbard showed definite uterine contractions as felt through the abdominal wall. No vaginal examination was made. The patient was conscious of these contractions, but made absolutely no complaint of pain and evidently experienced none. The fetal membranes had ruptured during the night. Dr. Hubbard expressed the opinion that labor was probably beginning, but did not feel that the situation was sufficiently urgent to demand his remaining with the patient. When he returned, about three hours later, the head was on the perineum, labor having been accomplished up to this point absolutely without pain and practically without the consciousness of the patient. The uterine contractions had evidently been adequate up to this time, though probably somewhat lacking in force. The abdominal muscles, so far as ascertained, took no part in the process. There was no evidence that further progress would be made and delivery of a healthy, ordinary sized girl baby was effected without difficulty through the application of forceps. The perineum was torn and was at once sewed up without the slightest evidence of pain. There was no post-partum hemorrhage; the uterus contracted in perfectly normal fashion and without further incident. The entire labor had, therefore, been accomplished absolutely without pain, and the birth of the baby was merely an incident in the day, of small significance in comparison with the pain and distress caused by the underlying disease. There was some slight complaint when the placenta was expressed by the hand on the abdomen. The convalescence from labor was entirely uneventful, even the perineal wound healing without complication in spite of the complete anesthesia of the part and the urinary incontinence. The baby was not nursed. Dr. Hubbard has called my attention to the following points of special interest in the labor: first, its painless character; second, the absence of any distinctive use of the auxiliary muscles during the second stage; and third, the satisfactorily firm contractions of the uterus after delivery.

The patient died March 25, the paralysis of the legs remaining complete and the entire illness associated with much pain unexplained during life. The autopsy showed a completely destructive, sarcomatous tumor of the whole lumbar and sacral region of the cord, thence extending upward on its dorsal surface into the cervical region. The details of pathological findings are given at length in the paper to which I have already referred.

I wish now merely to call attention to the points which are of particular interest from an obstetrical standpoint, and especially to consider the following matters: first, the conditions under which painless labor may occur; second, the relation of the accessory abdominal muscles to the pains of labor; third, the general innervation of the uterus.

I. Olshausen[2] has pointed out that painless labor may occur in placenta previa with succulent soft parts, and also calls attention to the fact that under very rare conditions a labor may be wholly painless in normal persons. In this connection a recent paper by Wolff is of importance. Wolff[3] reports the case of a primipara of twenty-eight, who had no pain whatever in spite of normal contractions of the uterus, and likewise made no use

* Read before the Obstetrical Society of Boston, April 23, 1907.

[1] BOST. MED. AND SURG. JOUR., 1907, clvi, 161.

[2] Olshausen: Zeitschr. für Geburtsh. und Gynäk., 1897, xxxvi, 369.

[3] Bruno Wolff: Ueber Schmerzlose Geburtswehen. Arch. für Gynäk., 1906, lxxxvii, 402.

of the accessory abdominal muscles in the efforts to expel the fetus. The patient was rather exhausted during the labor, but had no clouding of the mind. The pulse and temperature remained normal, and no sign whatever was found of disordered sensibility or of any other nervous derangement. There was no indication of hysteria. As the labor progressed there was no pain, but it was finally necessary to complete the birth artificially, because of weakening contractions. During this operation an anesthetic was used. Delivery was followed by some hemorrhage from the atonic uterus, but convalescence progressed normally. The labor had continued over a period of two days and the statement is made that only at the beginning were very slight pains felt. Subsequent examination of the nervous system again showed no abnormality whatsoever. The patient remembered all the events of the labor. At the beginning of the labor a small dose of morphine and chloral was given, but it was regarded as wholly insufficient to lead to a deadening of the pain to the extent observed. Wolff also refers to seven other similar cases, both primiparous and multiparous, presenting varied clinical pictures.

Such cases are, however, extraordinarily rare, especially in primiparous women. It is no doubt a sufficiently common experience that in multiparæ labor is unassociated with long-continued or severe pain. Birth in these cases is no doubt often effected by relatively few uterine contractions, but such contractions, few as they may be, are in the vast majority of cases accompanied by distinct and unmistakable labor pains. The question which chiefly interests us now is not the ease of birth in any given instance, but its painless character, when the conditions for pain are present.

The disorders of the nervous system in which painless labor occurs are essentially those in which the sensory conduction is interfered with. It is possible, for example, that a labor may be painless as a result of hysteria, in which, together with sensory disorders, a paralysis of the legs may be present simulating a structural lesion. The usual non-involvement of the sphincters in hysteria is a valuable differential point. Leaving aside various cerebral disorders, associated with disturbances or loss of consciousness, the more frequent causes of painless labor are to be found in destructive lesions of the spinal cord, involving the lumbar region or lying anywhere in the cord above. Such lesions are usually of the character of myelitis, using that term in its broad sense. Instances, for example, have been described through compression by means of tuberculosis or other external agencies. Cases of painless labor associated with tabes dorsalis are naturally explained by the involvement of the sensory tracts, but are of less interest from the physiological standpoint, inasmuch as the motor mechanism remains undisturbed. In spite of the fact that there are a number of conditions in which painless labor may occur, the cases are still extremely few in which adequate reports have been made. In 1904 Windscheid [4] collected the cases associated with myelitis and reported one of his own, which was briefly as follows: A woman, forty-three years, the mother of fifteen children, was nine months pregnant with the sixteenth. Following a fall on the buttocks there was gradual loss of power in the legs, accompanied by sensory disorders and urinary incontinence. When examined she was emaciated and completely paraplegic, except for some movement of the two great toes. There was paresis of the abdominal muscles and anesthesia up to the level of the umbilicus. Reflexes, both deep and superficial, were increased. Sepsis developed and the birth took place four days after without pain, or use of the accessory abdominal muscles, with great ease, and without knowledge of the labor on the part of the mother. She died of sepsis three days after the birth of the child. This case is evidently not a particularly striking one, first, on account of the great number of children she had had; secondly, on account of the supervening sepsis, with presumable rise of temperature and possible dulling of consciousness; and thirdly, because of the evident extreme illness of the patient during the period of labor. The clinical diagnosis of dorsal myelitis in this case was substantiated by the autopsy.

In this paper Windscheid refers briefly to cases reported by Boshan, Benicke, Nasse, Brachet, Renz, Wachenhusen, Schnitzer, and refers also to a dissertation of Kasbaum, in which the general subject is discussed. All of these cases were due to a destructive lesion of the cord, either by inflammatory or tuberculous processes.

So far as my study of the references has gone, I find no mention of a painless labor being produced by an invasion and consequent destruction of the cord through a tumor other than tuberculous. In our case it is evident that the labor was without pain, because of the destruction of the lumbar cord, through which unquestionably must be conveyed the fibers which transmit sensation of uterine contractions to the brain. The lesion found post-mortem, therefore, adequately and completely explains the painlessness of the labor.

II. The physiological significance of the pain associated with labor has always been, and remains, a matter of much interest. It is said that labor is the only physiological process in which pain is a normal accompaniment. It is, therefore, reasonable to suppose that pain has a certain definite significance in the process of birth. It is, however, evident that under certain circumstances, either of idiosyncrasy or of destructive lesion of the cord, birth may take place entirely without pain, and it therefore follows that pain cannot be regarded as essential to the process. Zweifel has advanced the theory that the object of the pains is to force the mother, through active inspiration, to supply her blood with oxygen in order that the child may not be asphyxiated when the supply of oxygen is of necessity cut off during uterine contractions. This theory evidently cannot apply to all cases, inasmuch as it has not been

[4] F. Windscheid: Ueber Entbindung bei Myelitis. Arch. für Gynäk., 1904, lxxii, 360.

shown that painless labor is fatal to the child. It is certainly not to be regarded, therefore, as a wholly adequate explanation, although it may be in a measure true. In an important paper, written in 1900, Kreis[5] reported six cases of medullary narcosis, in which labor was performed absolutely without pain and without interference with the uterine contractions. The interesting fact was, however, observed that the accessory abdominal muscles did not spontaneously contract during the progress of labor. It was also observed that a request on the part of the physician to use the abdominal muscles could easily be complied with by the patient with the usual effect. In other words, involuntary or reflex contractions of the abdominal muscles were not aroused when no pain was felt, but could be voluntarily stimulated by an act of the will. From this it follows, apparently, that pain and the action of the abdominal muscles are closely allied and that under ordinary circumstances pain is necessary to bring about the proper action of these muscles in the expulsive effort. Müller also reports thirty-two cases of adrenalin cocaine spinal anesthesia from the Greifswald clinic. In only one of these were the abdominal muscles used involuntarily, corresponding with the view set forth by Kreis. Wolff also in the paper to which we have already alluded assents to the correctness of the foregoing observation, but goes a step further on the positive side and asserts that pain is a necessary stimulus to regular contractions of the abdominal muscles, a fact first proved by the study of painless labor, whether artificially produced by spinal anesthesia or due to various pathological lesions. According to this view, therefore, the physiological significance of pain is to provide a regulatory mechanism for the action of the abdominal muscles. There is evidence to show that pains in the lower animals have a function similar to that in man. In the case which Dr. Hubbard and I have had an opportunity to observe, the labor progressed, as I have before stated, without pain. There was also no noticeable action of the abdominal muscles, although they could not have been paralyzed by the existing lesion during the progress of labor, which bears out the hypothesis to which I have just referred. In general, therefore, from this point of view, the pain of labor is to be regarded as of physiological importance in regulating the action of the accessory abdominal muscles in the act of birth. Pain is certainly not essential to effective contractions of the uterus.

III. The final question of the relation of the uterine nerve supply to the spinal cord, brain and sympathetic systems is also a matter of much interest. Budge, quoted by v. Hösslin,[6] regards the chief centers for the uterus as lying in the cerebellum, oblongata and one at the height of the fourth lumbar vertebra through which uterine movements are aroused. Similar movements may be aroused by the stimulation of the genito-spinal center at the height of the fifth lumbar segment. In general, with various divergencies in detail, observers have found centers in the cord, oblongata and in various sympathetic plexuses. Experiments have, however, shown more and more definitely the practical independence of the uterus from its central connections. Resection of the dorso-lumbar cord (Goltz) has not interfered with the birth of normal pups. Destruction of the lumbar cord itself has also not prevented normal birth. Further experiments have demonstrated that uterine contractions will take place when the uterus is separated from spinal or sympathetic tracts. Kurdinowski, for example, showed that a wholly separated rabbit uterus is capable of contracting in normal fashion. Still more extraordinary is a case[7] recently reported by Schmorl, which was briefly as follows: A woman, thirty-three years old, while pregnant, developed a rapidly growing myoma of the uterus, for which operation was attempted. It was, however, found that the myoma could not be successfully removed on account of excessive hemorrhage, and a complete hysterectomy was done. After removal of the uterus, on examination, it was observed that the internal os was slightly patent. In half an hour thereafter the size of the os increased to the size of a five-mark piece, and at the end of two hours a fetus, estimated at about the third month, was born. During this period of "labor," slow contractions of the uterine muscle were observed. After the birth of this fetus, the birth of a second began, but the uterine contractions were not sufficient for its expulsion. This remarkable case is a further striking proof that uterine contractions are possible after complete separation from the central nervous mechanism. It is also of interest in connection with certain cases reported of births after death.

The general conclusion is, therefore, necessitated that the uterus of mammals, even after the cutting off of the cord and ganglia lying in the hypogastric plexus, is capable of rhythmical contraction, but it appears that such contractions are somewhat less forcible than when the entire nervous system is intact. The brain is to be regarded simply as a regulatory mechanism. Armand Routh (quoted by v. Hösslin) has summarized our existing knowledge of the entire matter, in general, as follows:

1. Birth is partly automatic and partly reflex.

2. Direct connection with the brain is not essential for co-ordination of uterine action, although the brain appears to have influence on the pains in so far as it contributes to their regularity.

3. Direct connection between the uterus and lumbar enlargement, through the agency of sympathetic ganglia between the first and third lumbar vertebræ is apparently necessary for the regular contraction and retraction of the uterus as seen under normal conditions.

4. The uterus is apparently capable of expelling its contents provided the genital canal is re-

[5] Kreis: Ueber Medullarnarkose bei Gebärenden. Arch. für Gynäk., 1900, xxiv, 724.

[6] v. Hösslin: Die Schwangerschaftslähmungen der Mütter. Arch. für Psychiat. und Nervenkrankh., 1904, xxxviii, 730. An exhaustive discussion of various nerve lesions which may occur during pregnancy.

[7] Schmorl: Centralbl. für Gynäk., 1906, xxx, 917.

laxed when totally cut off from the spinal cord, but its contractions are more likely to be irregular and incomplete.

The observation of the case reported briefly in this paper serves to substantiate many of the points to which allusion has been made, and demonstrates from the standpoint of a unique pathological lesion that uterine contractions may occur without pain; that the fetus may be carried far on its way, if not wholly expelled, by a uterus separated from its central connections and without the aid of the abdominal muscles; and that its final contraction after the expulsion of the placenta may be complete and satisfactory, precluding the likelihood of post-partum hemorrhage.

Clinical Department.

"A CASE OF CHRONIC OTITIS MEDIA, HEMORRHAGE INTO THE EXTERNAL AUDITORY CANAL, PERFORATION OF THE WALL OF PHARYNX, WITH FATAL HEMORRHAGE FROM THE JUGULAR VEIN.*

BY FREDERICK L. JACK, M.D., BOSTON,
AND
FREDERICK H. VERHOEFF, M.D., BOSTON.

J. O., two and one-half years old, was first seen at the Massachusetts Charitable Eye and Ear Infirmary on Jan. 8, 1907, when the following history was obtained. The patient had never had any of the diseases of childhood, or any ear trouble prior to the present attack. For two weeks she had been fretful and evidently in pain. A discharge of pus from the right ear had been noticed for several days, and a swelling postaural for nearly a week. Considerable coagulated blood was found in the right meatus. Over the mastoid tip, extending about one inch below and one and one-half inches posteriorly, was a large fluctuating swelling about the size of a tangerine, tender on pressure. About two hours following admission to the ward the child was taken with severe hemorrhage from the mouth and nose. When the House Surgeon arrived the child was not breathing and was exsanguinated. Clots were found in the mouth and nares, with signs of vomitus on clothing. Adrenalin was given subcutaneously and normal salt solution, together with artificial respiration, but without avail.

Autopsy by Dr. Verhoeff, nineteen hours after death, head only. Body that of a fairly nourished female child. Slight rigor mortis. Lividity of dependent parts. Both nostrils and right external auditory canal are filled with clotted blood. Below and slightly behind the meatus there is a swelling about the size of an olive, over which the skin shows ecchymosis. Meninges and brain are normal, no evidences of tuberculosis. The venous sinuses are free, including the right lateral sinus and bulb. The whole temporal bone, with a large amount of the soft tissues beneath it, including a portion of the wall of the pharynx, removed and hardened forty-eight hours in 10% formalin. A stream of water can be forced through the carotid canal without any of it finding its way into the tympanum. The soft tissues beneath the bone, which contain the carotid artery and jugular vein, are infiltrated with blood from a large hemorrhagic extravasation. This is in communication with the pharynx a short distance below the mouth of the Eustachian tube. It also extends outward to the angle of the jaw, undermines the subcutaneous tissue, forms the swelling already mentioned and communicates with the lumen of the external auditory canal at the bony margin of the latter. The tympanic membrane is now intact, but is retracted and united to the promontory, evidently as the result of an old perforation. The tympanic cavity and Eustachian tube contain a large amount of exudate, but are free from blood. The ossicles are *in situ*. Attached to the wall of the tympanum are several small polyps. The attic and mastoid cells are filled with exudate, but the bony tissue is apparently not necrotic. The lining of the carotid artery, in its nearest vicinity to the tympanum and Eustachian tube, is smooth and intact.

Histological examination (Decalcification in 5% nitric acid, embedding in celloidin): The wall of the external auditory canal shows a marked inflammatory reaction and is giving off an exudation of pus cells. The tympanum shows the appearance characteristic of chronic suppurative otitis media. The submucosa is markedly infiltrated with chronic inflammatory cells, and the free exudate consists chiefly of serum and pus cells. The lining epithelium is comparatively normal. The polyps are found to consist of edematous connective tissue only slightly infiltrated with inflammatory cells. The air spaces leading out from the tympanic cavity are filled with seropurulent exudate. The medullary spaces of the surrounding bone show an infiltration with chronic inflammatory cells, among which plasma cells largely predominate, and occasional foci of pus cells. The internal ear is normal. The carotid artery itself is normal, but its sheath shows a marked chronic inflammatory reaction which extends as far as the first bend in the bony canal, but which is most marked at the entrance of the latter. The sheath of the artery for a short distance is also infiltrated with blood which has forced its way from the large hemorrhage beneath the temporal bone. The soft tissues in which this hemorrhage has taken place are involved in a formation of granulation tissue in which occur large areas of pus cells. The wall of the jugular vein, which passes through this abscess, is completely necrotic, lined with purulent thrombi and in places perforated. Higher up, where the vein is in relation with the bone, its wall is normal. Sections of the abscess beneath the temporal bone, stained by the Gram method, show numerous streptococci occurring in short chains and pairs. No other bacteria are to be seen.

Diagnosis. — Chronic suppurative otitis media, abscess beneath temporal bone, due to streptococcus pyogenes. Perforation of internal jugular vein. Infected hematoma. Hemorrhage into external auditory canal. Perforation of the wall of the pharynx, with fatal hemorrhage from internal jugular vein.

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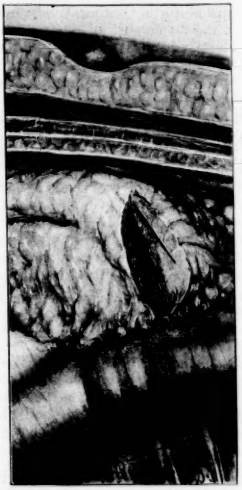
UNDER the title of the Hippocratean College of Medicine, a night school for the study of medicine has been opened in St. Louis.— *Medical Record.*

A STRANGE REASON FOR PERSISTENT ABDOMINAL PAIN. INTESTINAL ADHESIONS CAUSED BY A PIN WHICH HAD PENETRATED THE UMBILICUS WITHOUT THE KNOWLEDGE OF THE PATIENT.

BY FARRAR COBB, M.D., BOSTON,

Assistant Visiting Surgeon to the Massachusetts General Hospital.

IT is recognized that intestinal adhesions, with or without abscess formation, may be caused by the migration from the stomach or intestines of sharp foreign bodies, such as pins, needles or fish bones, which have been swallowed. Occasionally such cases have been reported. The case detailed here is probably unique because of the location and method of entrance of the pin and the entire ignorance of the patient in regard in it. Because of the very unusual condition found at operation, it is thought worth while to report it.



M. H., single, nineteen years old, entered the West Surgical Service of the Massachusetts General Hospital on Oct. 8, 1902. Dr. Beach, the senior surgeon of the service, very kindly turned the case over to me. For two weeks she had been under observation in the Out-Patient Department and was recommended to the wards for operation because of a suspected abdominal neoplasm or tubercular peritonitis. The family history was unimportant. She had always been in good health until the onset of the present trouble about three months ago. Catamenia began at sixteen years, at first profuse, but in the last two years scanty and accompanied for one day by much pelvic pain, requiring her to go to bed. There had been considerable irregularity, but none for several months. Three months before entrance, without known cause, she began to be easily tired and to have constant pain in the abdomen, most severe in the region of the umbilicus and in the left hypochondrium; it was sometimes sharp and darting and ran into the pelvis and up to the region of the left breast. This pain had been slowly increasing in severity, but the patient had done her usual housework until two weeks ago, when it became so intense that she could not stand. From the beginning her appetite had been poor and there had been some nausea, but no vomiting. She had slept poorly and had had more or less headache. She noticed that she was compelled to pass urine frequently, as often as once an hour during the day and more than twice during the night, and that for a few weeks before entrance the act of urination had been painful. The bowels had moved daily and the movements were dark in color; she had noticed no blood. She thought she had lost weight, but did not know how much. She was very anxious to be relieved from pain, which prevented her from earning her living as housemaid.

Examination showed a well-developed and nourished young woman. Nothing abnormal in the chest. Urine normal. Leucocyte count, 18,000. Hymen present. Uterus small, anteflexed, movable. Left kidney palpable. Palpation of the abdomen developed tenderness at the umbilicus, most marked on the patient's left and running into the left hypochondrium, with slight muscle spasm. Nothing abnormal in the appearance of the umbilicus was noted. The patient was kept in bed under observation for four days, during which time the evening temperature was 100° F. daily. Pulse and respiration were normal. During this time she complained constantly of pain in the region of the umbilicus, with nausea, but nothing abnormal was found upon examination except the tenderness mentioned above. Operation was determined upon because of the pain, which was manifestly severe at times. No certain diagnosis of the cause for the pain seemed possible.

The case was operated upon by me on Oct. 13. The anesthesia was nitrous oxide gas followed by ether. Bimanual examination after the patient was under ether revealed nothing abnormal in the pelvis save marked anteflexion of the uterus. After dilating and curetting the uterus, to correct to a certain degree the anteflexion, the patient was placed in the Trendelenberg position and the abdomen opened in the median line for the purpose of exploration. Upon opening the peritoneum the following conditions were found: The urachus was much larger than usual, fully the size of a pencil. The bladder seemed normal in size, but apparently was held partially out of the pelvic cavity by the large urachus. For the space of one to one and one-half inches above and below the umbilicus the omentum was firmly adherent to the anterior parietes and to the small intestine; the omental adhesions surrounded the urachus and bound it and the small intestine firmly against the abdominal wall in the umbilical region. Palpation of the omental adhesions detected a hard mass the size of a large English walnut buried in the adhesions just under the umbilicus and in the center of this a sharp object like a pin or a needle was felt. The omental adhesions were tied off with catgut. After separating the intestine with some difficulty the urachus, which was found to be patent, was tied off and excised. The sharp object was discovered to be a common pin which had penetrated the abdominal cavity by transfixing the umbilicus. For the sake of showing the pin *in situ*, as well as adopting the best method of removal of the infiltrated area (see illustration), the umbilicus, with a moderate amount of neighboring tissue, was excised, after which the abdominal excision was closed in layers. Examination of the excised tissues showed that the pin had entered at the umbilicus and had become buried in omental adhesions, but no point of entrance on the external skin could be found. The urachus in the inflammatory mass excised was practically obliterated. In all probability the urachus had been patent up to the skin

covering the umbilicus previous to the reaction caused by the pin.

The patient made an uneventful recovery and was seen by me three years after the operation, when she reported herself as in good health, with no abdominal pain and regular catamenia. She occasionally was bothered by frequency of micturition, but not nearly so much as before the operation.

In the illustration is shown in a semi-diagrammatic way the condition found at operation. The patient at all times denied all knowledge of how the pin gained entrance into her abdominal cavity, but on close questioning after the operation she remembered that she had fallen down a flight of stairs shortly before the onset of the abdominal pain. The fall was a bad one and she suffered from painful bruises. It is possible that at this time a pin in her clothing may have been forced through the tissues of the umbilicus, which were thinner than normal by reason of the patent urachus, and the pain of her other injuries prevented her noticing the minor wound. It is interesting to note the frequency of micturition associated with the abdominal pain. This may have been caused by a certain amount of shortening and contraction of the patent urachus due to its involvement in the mass of adhesions; on the other hand, it may have been a purely reflex nervous manifestation.

Medical Progress.

PROGRESS IN PEDIATRICS.

BY THOMAS MORGAN ROTCH, M.D., BOSTON,
AND
JOHN LOVETT MORSE, A.M., M.D., BOSTON.

STENOSIS OF THE PYLORUS IN INFANCY.

(Concluded from Vol. clvi, No. 26, p. 854.)

It is evident from these cases that the majority of authors disagree with *Heubner* as to the best method of feeding these cases. They almost all agree that it is better to give small amounts often rather than large amounts at longer intervals. They also almost unanimously favor lavage. Most of them believe that breast milk is the best food in this condition, although some believe in giving it diluted. Some give alkalies, believing that the condition is due to hyperacidity. Marx used them in one of his cases in which the acidity was high with good results, but did not use them in another in which the acidity was low. The Germans, led by Ibrahim, use poultices to the abdomen and feel that they are of considerable value. [The writers are somewhat skeptical as to the efficacy of poultices in these cases.]

Very few opinions have been expressed as to what happens when recovery occurs since Ibrahim summed up the subject in his paper. Marx, however, believes that recovery takes place largely as the result of compensatory hypertrophy of the other muscles of the stomach.

Several cases have been treated by small doses of opium before feeding, with apparently good results. These cases are as follows:—

Neild: Visible peristalsis; tumor. No improvement on bismuth and soda with breast feeding. One-sixtieth minim of tincture of opium twenty minutes a.c. Much improvement in a week. Opium stopped in five weeks. Recurrence of vomiting. Opium resumed and vomiting relieved. Dose gradually diminished. Recovery complete and lasting.

Visible peristalsis; tumor. Same diet. One-eightieth minim tincture of opium twenty minutes a.c. No improvement in a week. Then one-fortieth minim given. Marked improvement in a week. Continued to do well.

Third case doing well under same treatment also referred to.

Rob: Visible peristalsis; no tumor. No benefit from changes of food and lavage. One-eightieth minim tincture of opium twenty minutes a.c. Improvement in one week which continued. Well five months later.

Sutherland, however, gave up to seven minims daily of the liquor opii sedativus for some time without any effect on the peristalsis.

In speaking of the medical treatment of pyloric stenosis Sutherland remarks that the pylorus has two functions, — one of contraction and one of relaxation. The latter has been pretty generally overlooked. The fact that the muscular fibers are hypertrophied is no reason for assuming that only the power of contraction is retained. In fact, the hypertrophied pylorus has been seen to relax during an operation. The variation in the severity of the symptoms shows that even in marked cases it relaxes at times. The difficulty is that it does not do so enough to allow sufficient nourishment to pass through. The aim of medical treatment must be, therefore, to restore the function of relaxation of the pylorus, which has been in abeyance to the more powerful action of the constrictor muscular fibers. All sources of irritation in the stomach which may maintain pyloric spasm must be removed. It must be kept free from irritating food. Small amounts must be given at a time, in order to secure complete digestion. Lavage must be used daily for a long time, best at a time when, under normal conditions, the stomach is empty. Breast milk is the best food. Fats, in artificial foods, are likely to cause trouble. Finally, he expresses "the hope and belief that as our knowledge and experience of the medical treatment advance there will be fewer and fewer cases in which surgical intervention is called for."

Very little work has been done in most cases as to the chemistry of the gastric digestion, and what little work has been done has given varying results. It is safe to say that nothing of importance has been learned in this line.

A whole session of the Section on the Diseases of Children at the Toronto meeting of the British Medical Association, last summer, was devoted to this subject, and several valuable papers were presented, notably those by Cautley and Stiles. Many valuable points were also brought out in the discussion of these papers.

Cautley distinguishes between functional pyloric spasm and congenital hypertrophic stenosis. He says that there is a group of cases in infancy which shows a combination of symptoms which are extremely liable to give rise to an erroneous diagnosis of congenital hypertrophic stenosis and to which the name of pyloric spasm may be given. He admits that there is no absolute proof that there is spasm of the pylorus in these cases, but says that he can put forward no other plausible explanation. The main feature of this condition is severe and continued vomiting. The food is usually brought up at once, but sometimes a considerable quantity is kept down and then violently ejected. Constipation may be present. Some of his cases had visible peristalsis and dilatation of the stomach. He makes no mention, however, of tumor. He thinks that these cases prove that spasm of the pylorus is not the cause of the marked hypertrophy of the pylorus seen in congenital hypertrophic stenosis.

He has had sixteen cases of congenital hypertrophic stenosis and bases his conclusions on these cases. He believes that it is congenital in origin and that it is rarely compatible with long life. He attaches great importance to visible peristalsis and states that it may be visible only after feeding and that it is best elicited by giving a fair sized meal, by flicking the stomach wall with the finger or by applying a cold object. Dilatation depends on the duration and degree of obstruction. The absence of dilatation is not a contra-indication in early cases at a time when operative treatment gives the best results. The diagnosis is certain if the pylorus is felt. It is greatly to the detriment of the child, however, if the physician waits until he can definitely feel a tumor before he ventures to make a diagnosis.

He divides the cases into typical and mild. In the typical cases there is characteristic vomiting, constipation, wasting, visible peristalsis, dilatation of the stomach and tumor. In the mild cases the vomiting varies with the diet. If the stomach is washed out daily and a diluted food given, vomiting may be entirely absent for a week or more at a time and the infant may gain in weight. These are the cases which may get well without surgical aid. It is probable, however, that the hypertrophic stenosis of adults is due to the persistence of the infantile condition. Some may recover; others suffer from chronic gastric trouble; most die from progressive wasting. He says that although the amount of muscle may vary a little in the normal pylorus and in those who apparently suffer from spasm, it remains very small and in section roughly triangular. There are no intermediate stages between the conditions found in these and those found in hypertrophic stenosis. He believes "that Nature in her extreme anxiety to provide a sufficient pyloric sphincter has overexerted herself and produced too great a quantity of muscular tissue. There is a true hyperplasia, a simple redundancy of fetal growth." He brings forward various arguments against spasm as the cause of the hypertrophy.

In speaking of the diagnosis between spasm of the pylorus and hypertrophic stenosis, he says that in the former the vomiting is different in character, peristalsis is slight or absent, the stomach is rarely dilated, pronounced constipation is unusual, there may be diarrhea and there is no tumor. It is rare for two or more feeds to be retained and then vomited. In case of doubt the effects of medical treatment are of value. There is greater danger of pyloric spasm being diagnosed erroneously as pyloric hypertrophy than of the opposite mistake being made.

The outlook is extremely bad if treatment is purely medical even when the obstruction is incomplete. He believes in early operation and that the prognosis depends mainly upon the general condition of the infant. He believes that pyloroplasty is the best operation.

Stiles quotes Professor Cunningham at considerable length with regard to the musculature of the pyloric canal. Cunningham found great thickening of both muscular layers in the specimens which he examined. Stiles believes, therefore, that from the purely anatomical point of view the only difference between the normal pylorus and the stenosed pylorus, as met with in infants, is that in the latter the muscular coat is greatly thickened. He believes that it is a distinct pathological entity, but admits that both in the child and in the adult there is clinical evidence to support the view that cases of pure spasmodic stenosis of the pylorus do occur, and believes that the majority of the cases of infantile pyloric stenosis that have recovered without operation belong to this category. A considerable number of cases presenting the symptoms of pyloric stenosis have recovered without the aid of surgical treatment. It rests with the physician to settle whether these recoveries are cases of spasm without hypertrophy or a combination of spasm and hypertrophy, the former predominating. It is of great importance to follow up the life history of such infants as are supposed to have been cured of pyloric stenosis without operation. If they again suffer from gastric symptoms pointing to pyloric stenosis surgical treatment will take the same place in pyloric stenosis of the infant that it has taken in that in the adult.

He divides the cases of pyloric stenosis into two distinct groups, namely, the purely spasmodic without any hypertrophy, and the true congenital hypertrophic in which a varying amount of spasm or tonic contraction is superadded. The first group may be expected to get well under dietetic and medical treatment, while the latter group must assuredly die unless surgical treatment is resorted to. He does not think that the kind of operation is of much importance, the main point being to operate early. He believes that there is an intermediate group in which the hypertrophy, although present, is less marked. It is these cases which have probably led to the confusion and differ-

ence of opinion which exists among physicians regarding the pathology and treatment of infantile pyloric stenosis. He advises a diagnostic incision in all cases in which the diagnosis is doubtful and in which medical treatment is not bringing about an improvement. If the case is one of spasm without hypertrophy the physician and surgeon should together decide as to the advisability of divulsion. If the infant is young and feeble and the hypertrophy not marked he prefers divulsion. If the general condition is satisfactory and there is marked hypertrophy, the choice lies between pyloroplasty and gastro-enterostomy.

The following summary in an editorial in the *British Journal of Children's Diseases* sums up the subject very well: "The summary of the writings and observations of the past year indicates that the disease is much more common than is generally supposed; that operative treatment in wasted infants is not often successful; that cases with apparently all the symptoms of the affection do get well without operation; that great care is essential in diagnosis before accepting a diagnosis of pyloric hypertropy necessitating operation from pyloric spasm, which is curable by simpler measures." In summing up our evidence it should be said that diagnosis in any case not operated on or autopsied is open to question.

It is evident that much has yet to be learned concerning these conditions and the diagnosis between them. It is especially important to know what happens eventually to those cases which are supposed to have stenosis and recover under medical treatment. An autopsy on one of these cases dead of some other disease after a lapse of months or years will teach us a great deal. So would an autopsy under similar conditions on a case cured by operation.

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Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

REPORT OF THE TWENTY-SECOND ANNUAL MEETING HELD AT WASHINGTON, D. C., MAY 7, 8 AND 9, 1907.

FIRST DAY, TUESDAY, MAY 7.

ADDRESS OF THE PRESIDENT.

Dr. F. P. Kinnicutt, New York, referred to the deaths of Dr. Jas. Stewart, of Montreal, and Drs. I. E. Atkinson and Thos. Lattimer, of Baltimore. He then gave an outline of the work to be done at the present session, saying: "The successive meetings of the Association of American Physicians have proved the wisdom of its founders. In the twenty-two years since its birth much of the best work of the laboratories and clinics of the United States and Canada has been yearly presented for the consideration, discussion and instruction of its members. Embracing, as it does, in its membership, the pure scientist in medicine, and the clinician in every field of its practice, this body has been an admirable example of the science and art of medicine walking hand in hand, the one or the other leading for the moment, but always with the willingness and desire to have its steps corrected if per chance straying from the path of truth. Such a union has given the Association its great strength. Only by such union is secure progress in medicine attainable."

THE CONNECTIONS OF THE OCCIPITAL LOBES AND THE PRESENT STATUS OF THE CEREBRAL VISUAL FUNCTIONS.

Dr. Adolph Meyer, New York, presented this paper under the following subdivisions: 1. Isolation of the geniculo-calcarine tract (2 cases). 2. Subdivision of sagittal marrows and their course. Marking of the calcarine area. 3. Degeneration of the occipital efferent path and the geniculo-calcarine tract, following degeneration of the calcarine cortex. 4. Marchi-degenerations from a small wound of the post-parietal cortex, involving the optic radiations: (1) afferent character of the external sagittal marrow; (2) efferent character of the internal sagittal marrow (contributing to the lateral part of the crus); (3) subcortical (external sagittal) fibers towards the motor area; (4) no fibers to the frontal lobe. Anatomical data for clinical co-relations.

Dr. L. F. Barker, Baltimore, said we should be grateful for this contribution to our knowledge of the association fibers which connect the primary visual centers with the adjacent and more distant centers. These studies were of the very greatest importance for diagnosis in neurology and psychology. It was only by control of clinical observations, by pathological anatomy, that we could hope for better ideas of localization and association.

CERTAIN FEATURES OF THE "NERVOUS BREAKDOWN," WITH SPECIAL REFERENCE TO TREATMENT.

Dr. James J. Putnam, Boston, in this paper studied the acute "nervous breakdown" as really typifying processes which are characteristic of more chronic neurasthenic conditions, but as affording especially good chances for observation, because the whole illness

runs its course, so to speak, under the physician's eye. The most striking example of this acute breakdown was perhaps the so-called traumatic neurosis, characterized by its period of predisposition, followed by periods of nervous shock, of apparent absence of symptoms, of gradually increasing illness, of an apparently stationary stage, of convalescence and recovery. Similar processes were of frequent occurrence as a result of non-traumatic shock, of strains during school and college life and many analogous influences, while diminutive periods of like type were frequently met with as intercurrent events in the course of chronic illnesses. The controlling influence in the causation of these states, and the controlling means of treatment, was the mental state of the patient. The essayist said that two classes of persons seemed to escape from these strains. First, those who have been prepared against such exigencies. Football players seldom suffer from such breakdowns; the same may be said of the soldier. A second kind of immunity was that possessed by persons who are broad on social lines and philosophical on ethical lines. They were guarded against a great variety of accidents. A large number of our troubles were social troubles, and this broad preparation which enables us to look upon social failure in a philosophical way gave immunity from strain. The treatment might be classed broadly as consisting of forms of re-education. The splendid method of Dr. Weir Mitchell, and the more specific method of re-education explained and worked out by Janey and others, were to be made use of; we should make patients more efficient, more philosophical and more ethical. We might not talk philosophy and ethics to patients in a technical way, yet if physicians were more trained in these departments of learning they would succeed better with this class of cases.

DR. JOHN MITCHELL, Philadelphia, asked about the more definite treatment of the early stages of acute nervous breakdown; very few neurologists, he said, see patients in this state.

DR. ADOLPH MEYER, New York, said that if we abstractly state that physicians should teach their patients philosophy and ethics, many physicians might take a rather strong misconception of the whole matter. The ethics that would be teachable and that would ultimately prevail would be the ethics and philosophy worked out of the common sense of our every-day experience.

DR. CHARLES DANA, New York, said nervous breakdown led to the development of mild types of psychoses. If the patients were put under ordinary common-sense environment they would get well in three, six or twelve months, or two years. The majority of these so-called neurasthenias were not nervous breakdowns but psychoses, and if put under proper conditions would get well, while if the strain were kept up the psychoses would become chronic.

DR. A. JACOBI, New York, examined these cases from an additional point of view; those that he had seen had almost all suffered from changes about the heart of a myocardial character. There was an active physical change, and by attending to the physical condition of the heart we could render great service to the patient.

DR. PUTNAM, in closing, said the treatment of the acute stage presented the greatest difficulty. In several traumatic cases he had found that absolute rest and encouragement had a very considerable effect. He agreed with Dr. Meyer that the whole thing should be put on the simplest and most matter-of-fact basis and believed, with Dr. Dana, that in these cases there was a psychosis. He believed that it was not a pure psychosis, but there were the physical signs. It must react upon the heart and all the viscera and even modified the galvanic conduction of the skin. He thought if philosophy is a science this was the place where it might be made effective.

THE CLINICAL STUDY OF ASPHASIA.

DR. CHARLES L. DANA, of New York, presented the results of the analysis of a series of cases of aphasia, clinically studied, aiming to secure a grouping of the aphasias as they are seen at the bedside, with a description, so that such groups might be recognized by the physician and taught to the student. The author discussed the views of Prof. Pierre Marie and said the old classification of aphasias have broken down in practice, and he offered an anatomical classification which he regarded as more practical, representing the type of aphasia upon certain charts devised by himself.

DR. M. A. STARR, of New York, thought that while the classification was not wholly a new one, it certainly had a great deal of positive merit. He was glad to have Dr. Dana put himself on record as recognizing these various types distinctly. Dr. Dana has brought forward evidence that establishes our older theories and controverts the very radical assertion of Marie, which his own experience did not support.

DR. J. C. PUTNAM, of Boston: These anatomical distinctions are very important, and I think this classification is very practical.

DR. DANA, closing: I believe that Marie has not proved that the frontal lobe of Broca's convolution has not a knowledge function.

THE PRESENCE OF INFLAMMATORY MASSES IN THE ABDOMEN SIMULATING MALIGNANT GROWTHS.

DR. E. G. JANEWAY, New York. The paper considered the existence of masses which either by palpation and ordinary examination, or by these and laparotomy, were considered malignant, but disappeared later. Two of these occured in connection with ulcer of the stomach, the others in different places in the abdomen.

DR. WM. OSLER, Oxford, England: We are indebted to Dr. Janeway for bringing this group of cases before us. They form an interesting anatomical group, which may be divided into: (1) Those associated with the gall bladder; (2) those associated with the stomach; (3) a large group of appendicular cases; and (4) cases associated with trouble in the sigmoid. I had my attention called particularly to the group of cases in which there has been a tumor mass connected with the sigmoid flexure, low in the left iliac fossa. This may be either the thickened glandulæ epiploacæ which have deceived even the elect, in cases where there has been diarrhea, dysenteric symptoms, blood, progressive emaciation and, on deep pressure, a definite nodular mass to be felt. In two cases operation showed the thickened masses, which we had supposed to be tumors, were, in reality, only the indurated glandulæ epiploacæ. In another group of cases in this region there is a thickening due to the perforation by a foreign body, usually a small spicule of some sort, or pericolic inflammation in that region. Such a condition existed in our distinguished surgical colleague, who was operated upon so happily last year and who had made up his mind that he had a carcinoma. It was only a thickened mass connected with the colon, probably largely pericolic in character.

We should, in these cases, urge early operation. While there are certain instances in which the surgeon disappoints us, yet, on the other hand, there are a great many cases in which the operation is very satisfactory and sometimes the tumor disappears apparently as the result of the opening of the abdomen.

THE ETIOLOGY OF ACUTE PANCREATITIS.

DRS. H. U. WILLIAMS and F. C. BUSH, Buffalo: Some recent cases of acute pancreatitis had been collected

with the idea that the more recent cases had been studied more carefully than those reported previously and the pathological anatomy would probably be more accurate. In the series collected gallstone occurred in only about 40% of the cases. In the cases where gallstones occur not a sufficient number occurred in the bile passages or in the diverticulum of Vater to make the authors think that the theory suggested by Opie that the association of gallstones with acute pancreatitis would explain all such cases. The authors suggested this mechanism: that the passage of stones left the opening of the diverticulum patent, so that under the pressure of the intestinal contractions the contents of the duodenum could go backward into the bile duct and pancreatic duct. They found some evidence to support this in their experiments on animals. They were not able to determine what particular constituents of the contents of the duodenum produced pancreatitis. Previous experiments and various investigators had shown that a great variety of substances injected into the pancreatic duct are capable of producing pancreatitis. By this injection of duodenal contents the authors were able to produce pancreatitis in some of the animals injected. They introduced an artifical gallstone into the common bile duct and forced it through the diverticulum by means of a probe from behind. They were then able to cause the contents of the duodenum to regurgitate under pressure in some cases and some of these cases were followed by pancreatitis, but more particularly by fat necrosis.

DR. EUGENE L. OPIE, New York: It seems to me by no means improbable that the mechanism that Dr. Williams has described might occur, that is, that a gallstone lodged in the lower end of the pancreatic bile duct might allow the penetration of duodenal contents into the pancreas, thus causing hemorrhagic pancreatitis since it is well known that a great variety of irritants so introduced produce the lesion. In the cases which I have examined in which especially large gallstones have occupied the diverticulum of Vater, the condition has been associated with chronic pancreatitis rather than acute pancreatitis. Apparently, the obstruction of the duct allows the penetration of the bacteria, though not of the duodenal contents, in sufficient quantities to produce the lesion. I am rather surprised to find that the proportion of gallstone cases in association with acute hemorrhagic pancreatitis is so small in Dr. Williams's cases. It may be due to the fact, as he suggests, that the bile passages are often neglected in the examination. Dr. Flexner has recently shown that bile salts are most efficient in causing acute pancreatic lesion and fat necrosis. He has found that the most extensive fat necrosis, and that most closely resembling the human lesion, occurs after the injection of bile salts into the pancreatic duct.

THE CALCIUM, MAGNESIUM, PHOSPHORUS AND NITROGEN BALANCES IN A CASE OF SO-CALLED PHOSPHATIC DIABETES.

DRS. L. F. BARKER and C. VOEGTLIN, Baltimore: This paper included the results of a metabolic study in a case of so-called phosphatic diabetes. A woman, who for years had suffered from dry skin, cracking of the heels and nervousness, and who had had constantly urine of high specific gravity and acidity, was placed upon Folin standard diet and the calcium, magnesium, nitrogen and phosphorous balances studied. The metabolism was abnormal; the urine on standard diet presenting high organic acidity, not due to uric acid, phosphates or lactic acid.

DR. WM. OSLER, Oxford: The chief point of interest in connection with this case is that any one of you would have said at once it was a case of diabetes: a Jewess, stout, with high specific gravity in the urine, frequent furunculosis, splitting of the fingers and heels. Repeated examinations by competent chemists, however, failed to discover any trace of sugar. She was under Van Noorden's care two or three times. She consulted me many times. I always regarded it as a case of prediabetes, expecting that at the next examination sugar would surely be found. I am exceedingly thankful that Dr. Barker had made this investigation as it is likely to turn out to be an entirely new type of disordered metabolism.

DR. ALONZO E. TAYLOR, Berkeley, Cal.: I am able to adduce a personal experiment. About two years ago I placed myself upon an ash free alcohol free diet. I was abstracting from my body each day so many grams of bases, which must have come from my muscular tissues and nerve tissues. The symptoms were at first only those of lassitude. About the sixth day I noticed a great deal of itching; then the entire muscular system became excessively sore to the touch. I lost entirely the power of sleep. At this time acidosis in the form of diacetic acid appeared. The irritability was profound. I realized that I was near the danger point and returned to normal diet. Within two or three hours of the ingestion of common salt there was a return to equilibrium of the nervous system.

DR. BARKER, closing: There is not any doubt that salts are just as important for our food as proteids, fats and carbohydrates. What Dr. Taylor has said is of the greatest importance. Such cases give us an interesting outlook for the future. It seems possible that for the neuroses, and possibly for the psychoses, we may be coming to the real organic basis.

THE RELATIONS BETWEEN DIABETES AND PREGNANCY.

DR. AUGUSTUS ESHNER, Philadelphia, said diabetes was uncommon during pregnancy in proportion as it is uncommon during the child-bearing period. Exceptionally, it had recurred during successive pregnancies. Pregnancy rarely occurred in diabetics, partly because diabetes in women is most common after the menopause, partly because of the debilitated general state of the diabetic patient and partly because of the functional derangement and the structural alteration of the generative organs. Complication of the one condition with the other usually increased the gravity of both. Often the fetus died *in utero*, or premature labor set in, the fetus dying at birth or shortly afterward. The liquor amnii had been found increased and in some instances to contain sugar. The mother sometimes died of the disease shortly after labor. In Dr. Eshner's case of diabetes the sugar disappeared from the urine with the inception of pregnancy, remaining absent until after the birth of a macerated fetus at term and reappearing shortly afterward.

EXPERIMENTAL FIBRINOUS PLEURISY.

DR. EUGENE L. OPIE, New York, read this paper, in which he concludes that sero-fibrinous pleurisy is produced by a sterile inflammatory irritant such as turpentine injected into the pleural cavity of the dog. Accumulation of fluid reaches a maximum at the end of three days and fluid has completely disappeared at the end of six days. Resolution of fibrin begins (first stage) while fluid is present and is completed (second stage) after the disappearance of the growth. In the first stage the fibrin of the exudate digests itself in the presence of weak alkali, but in the second stage it has completely lost this power and digests itself only in the presence of weak acid. It is possible that carbon dioxide in the body, acting as an acid, promotes resolution of the exudate by the enzyme. By aspiration of fluid and by other means the characters of the exudate might be modified.

ON CERTAIN ACOUSTIC LIMITATIONS OF THE STETHOSCOPE AND THEIR CLINICAL IMPORTANCE.

DR. LEWIS A. CONNOR, New York, narrated eight cases of aortic insufficiency, in which the murmur was distinctly heard with the naked ear, but which could be heard by no one by means of the stethoscope. In some cases of pneumonia and pleurisy, with effusion, where no bronchial breathing could be heard with the stethoscope, a high pitched blowing sound could be heard with the naked ear. This occurred sometimes twenty-four hours before it could be heard with the stethoscope. The common features of these sounds were: (1) high pitch; (2) faintness; and (3) a blowing quality. The various theories for explaining this difference were discussed. The sounds which are best heard by the ear were the ones which were of the most importance, whereas those heard with the stethoscope were for the most part well heard by the ear. It was unfortunate that in most of our medical schools students were taught to auscultate only with the stethoscope.

DR. S. S. COHEN, Philadelphia, said: As a teacher of medicine, I want to say that Dr. Connor has touched upon an important subject. I find that the sole advantage of the stethoscope to me is in localizing a sound which I previously discovered with the unaided ear.

DR. E. G. JANEWAY, New York, found cases which agreed with those of Dr. Connor; certain deep-seated pneumonias gave sounds to the unaided ear that were not obtained with the stethoscope. The same was true of some of the signs of heart disease.

DR. A. JACOBI, New York, remarked that it made a difference what sized area is covered. The ear covered a larger area and would discover things that no stethoscope would show.

DR. F. P. KINNICUTT, New York, said his personal experience in teaching had been quite in accord with the views expressed by Dr. Connor.

DR. CONNOR, closing, did not feel certain that he had found all the limitations of the stethoscope, but thought the matter worthy of very careful study.

SECOND DAY, WEDNESDAY, MAY 8.

SOME POINTS REGARDING TUBERCULOSIS IN INFANCY.

DR. L. EMMETT HOLT, New York, spoke of the frequency of pulmonary tuberculosis in infants, the importance of house infection and methods of obtaining sputum for examination. He reported 36 consecutive cases of tuberculous meningitis in children in which the bacilli were found in the fluid obtained by lumbar puncture. In the meningitis cases bacilli were frequently found in the sputum when pulmonary signs and symptoms were absent. He referred to the use of tuberculin in diagnosis.

DR. PEABODY asked if any serious symptoms followed removal of the cerebrospinal fluid.

DR. KOBER, Washington, asked whether the feces had been studied for the presence of tubercle bacilli.

DR. CABOT, Boston, said that among 100 children of tuberculous parents, studied at the Massachusetts General Hospital, Boston, tuberculosis had been found in 26.

DR. HOLT, in conclusion, said that no symptoms had been produced by removal of 1 to 3 oz. of cerebrospinal fluid. He had made no study of tubercle bacilli in the feces.

A STUDY OF NORMAL LIVING ANATOMY IN THE FIRST TWELVE YEARS OF LIFE.

DR. THOMAS MORGAN ROTCH, Boston, read this paper, in which he said that the value of the Rœntgen ray in the diagnosis of disease conditions had been much lessened by the difficulty in reading the plates. This depended, in part, on unfamiliarity with the normal. He had consequently made a study of normal Rœntgen ray anatomy at different ages of infancy and childhood and exhibited a series of illustrative pictures.

THE LIFE SAVING VALUE OF DIURESIS.

DR. S. J. MELTZER, New York, gave the result of a series of experiments on the subject contained in this title.

THE HEMORRHAGIC DIATHESIS IN BRIGHT'S DISEASE.

DR. DAVID RIESMAN, Philadelphia, reported two cases of uncontrollable bleeding in Bright's disease. The hemorrhagic diathesis occurring in Bright's disease might take the form of spontaneous bleeding from the mucous membranes — nose, mouth, uterus, intestines — or there might be bleeding into the skin, a true purpura. He said the condition was met with in all forms of chronic nephritis, perhaps more often where there was an associated arteriosclerosis. He considered the cause to be toxemia and in some cases altered state of the vessel walls.

A CASE OF SECONDARY CARCINOMA WITH RECURRENCES IN UNUSUAL SITES.

DR. GEORGE L. PEABODY, New York, reported this case. Patient was a woman, forty-three years old. Four years after removal of carcinomatous right breast she developed severe pains in lower extremities, back and shoulders, which did not yield to treatment. No swellings appeared. Urine increased in amount, occasionally showed casts and albumin. Sleeplessness and mild delirium followed. Lumbar puncture gave normal fluid. Just before death there appeared weakness of the muscles of the right eyelid, right side of face, right palate, with partial deafness of right ear. There was pain in lumbosacral region on attempting to sit upright and on pressure. Urine and feces involuntary. Death occurred from edema of lungs. Autopsy showed metastatic carcinoma of thyroid, one suprarenal, kidneys, one lung, wall of an old cyst of cerebellum, pia of pons, and medulla, perineal lymph sheaths of one trunk, nerve of cauda equina and of trunk nerve itself and of pial covering of cord. In the lung several large vessels were filled with new growth, suggesting an explanation for carcinomatous metastases.

DR. SOLIS COHEN, Philadelphia, referred to a case of metastatic carcinoma, in which the most prominent clinical symptom was dyspnea. There were no local signs in the chest; no effusion. Autopsy revealed an involvement of the bulb by carcinoma.

EXPERIMENTAL OBSERVATIONS UPON THE ACTION OF INTESTINAL ANTISEPTICS.

DR. J. DUTTON STEELE, Philadelphia, said there is no satisfactory method for determining the amount and character of bacterial activity in the intestines. Aromatic bodies in the urine form an inaccurate index. Counts of living bacteria in feces are misleading unless obtained from a fistula in the lower ileum, because many bacteria die in the large intestine. The most satisfactory method and the one used by the author was that of estimation by weight of bacteria in the feces (Strasburger). Attempts had been made to determine the effect of diet on the putrefactive and fermentative groups of bacteria, with no satisfactory results. The author's experiments related to the influence of drugs on intestinal bacteria; the drugs employed were bismuth salicylate and Beta naphthol. Charts were shown, giving the results of experiments. In normal individuals bismuth salicylate caused a diminution in amount by weight of bacteria in the

stools in every instance; the decrease was from ½ to ¼ the normal. There was a return to normal on the second or third day after the drug administration. Similar but less marked results were obtained with Beta naphthol, with the exception of one case; in this there was a mild grade of intestinal inflammation and amount of bacteria was increased. This corresponded with the results of others. The increase might be due to a loss of self-protecting power in irritative conditions of the intestine. The author concludes that ability to affect bacteria in the intestinal tract is dependent upon the condition of the tract; that diet and proper evacuations are important; that irritative drugs tend to increase amount of bacteria.

DR. L. A. CONNOR, New York, asked in discussion whether the diminution affected special varieties more than others, and whether it might not be the harmless forms which were killed off.

DR. STEELE replied that such qualitative estimations had not yet been made.

(To be continued.)

Book Reviews.

Physical Chemistry in the Service of Medicine. By DR. WOLFGANG PAULI, Privatdocent in Internal Medicine at the University of Vienna. Authorized translation by DR. MARTIN H. FISCHER, Professor of Pathology at the Oakland College of Medicine. Seven addresses. First edition. New York & London: John Wiley and Sons. 1907.

This small book consists of a series of seven lectures, given by the author, upon physical chemistry as applied to biological chemistry. It is for the most part theoretical and technical, and valuable only to those conducting research along the line of biological chemistry.

Along the Labrador Coast. By CHARLES WENDELL TOWNSEND, M.D., Author of "The Birds of Essex County." With Illustrations from Photographs and a Map. 289 pages. Boston: Dana Estes & Company, Publishers. 1907.

It is so seldom members of the medical profession venture successfully into the fields of literature that "Along the Labrador Coast" merits more than passing notice. The book is a description of the short trip of the author and Dr. Glover M. Allen to the coast of Labrador last summer to study the birds of that region. Notes made at the time form the basis of the work. The story is told in an easy, colloquial style that holds the interest and yet does not teem with wearisome details. To the lover of outdoor life and to the student of ornithology this book cannot fail to be of interest. The general reader is given a vivid picture of life in Labrador; with the aid of the well-written descriptions of scenery and the very satisfactory illustrations he catches the enthusiasm of the author and feels the call of the wild.

What mistakes there may be are due to errors of observation. One knows the author has seen and done the things he describes, and is not, like some of the nature writers, romancing from the vantage ground of a comfortable city home.

The book is most attractively gotten up: bound in gray linen with a picture on the front cover of a sunset in gold over black mountains. In the foreground is an eskimo in his kyack, also in black, and a white iceberg. The yellow-tinted paper adds to the effectiveness of the numerous illustrations, reproductions from photographs by the author and Drs. W. P. Bolles and E. A. Crockett, other medical visitors to these northern coasts.

A useful feature is the complete index compiled by the author. It contains, besides the chief topics, the common names of the birds and their scientific names as well.

There is need of popular books of just this kind, written by scientific men, and we hope to see further volumes from the same pen.

Saunders' Pocket Medical Formulary, with an Appendix. By WILLIAM M. POWELL, M.D. Eighth edition, thoroughly revised, enlarged and adapted to the eighth revision (1905), of the U. S. Pharmacopœia. Philadelphia and London: W. B. Saunders Company. 1906.

This useful little formulary has reached its eighth revision and been brought into accord with the last edition of the United States Pharmacopœia. We have on previous occasions spoken with favor of this formulary and see no reason whatever to change our estimate. It contains much information compressed into small and convenient form.

A Guide to Diseases of the Nose and Throat and Their Treatment. By CHARLES A. PARKER, F.R.C.S. Edin., Surgeon to the Throat Hospital, Golden Square, London, W. With 255 illustrations. New York: Longmans, Green & Co. London: Edward Arnold.

This is a textbook of 600 pages, in many respects similar to several which have appeared in the last few years. It is founded upon a systematic course of lectures to students and aims at a practical rather than an academic discussion of the various subjects. The operations which have become popular within the last few years, such as the submucous resection, Killian's frontal sinus operation, upper bronchoscopy and enucleation of the tonsils are included, but not recommended with the enthusiasm which the younger members of the profession might expect. The treatment of the numerous conditions which cannot be surgically attacked may be said to be profuse, strenuous and hopeful. It is better that a textbook should teach a student how to abort an inflammation or suppuration than that it should encourage therapeutic nihilism. The etiology of different diseases is well given, better than in most of our similar works. As the etiology of many of these diseases is much in dispute it is unavoidable that no advanced reader will always agree with the author's point of view. The same is true of different methods of operating, but as a whole the book will be found judicial, safe and well written.

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RUSSELL SAGE INSTITUTE OF PATHOLOGY.

MRS. RUSSELL SAGE has given the sum of $300,000 to found what will be known as the Russell Sage Institute of Pathology, as an adjunct to the City Hospital and the City Home (almshouse), on Blackwell's Island, New York. Mrs. Sage's wishes in regard to the matter were made known in a letter from Robert W. De Forest, her counsel, in which he said: "This institute is to be organized according to the plans and under the direction of Drs. E. G. and T. C. Janeway, with whom are to be associated, as ex-officio members, the Commissioner of Public Charities of the City of New York and the President of the Medical Board of the City Hospital and, as individual members, Dr. D. Bryson Delavan, Dr. Simon Flexner (of the Rockefeller Institute), and Prof. Graham Lusk. The effective work of the institute will depend upon the maintenance and continuance of the helpful relations between the Department of Public Charities and those who are now performing the duties of pathologists to these hospitals. The income of the institute from this source will be based upon the continuance of such co-operation to the satisfaction of the gentlemen named as trustees. Mrs. Sage hopes that as the result of this endowment the research and educational work of these hospitals will be largely increased, to the good of the general public and particularly in dealing with the diseases to which old age is liable."

At a meeting of the Medical Board of the City Hospital, held on June 24, resolutions were adopted, in which the Board thanked Mrs. Sage for her munificent gift and expressed its appreciation of the honor conferred upon the hospital, "realizing that this has been the first occasion upon which a municipal hospital in this city has been so generously provided for by a private individual, for the purpose of fostering medical education and research. It is the hope of the Medical Board," the resolutions go on to say, "that this gift of Mrs. Sage may establish a precedent for others, which may lead to like endowments in other municipal institutions."

The plan for the proposed institution was submitted to Mrs. Sage for her consideration, through Mr. De Forest, in April last, by Dr. Theodore C. Janeway, son of Dr. Edward G. Janeway, who is a visiting physician to the City Hospital. In the communication, which met with so generous a response, Dr. Janeway quoted a recent address of Dr. Welch, of Johns Hopkins University, in which he directed attention to the fact that medical science in the last fifty years had been able to increase the expectation of life for every individual by twelve years, but that this expectation held good only before the age of forty; after which our expectation of life was no greater than that of our forefathers. This, he said, was because the prevention of disease thus far had been through the study and knowledge of infectious diseases which are especially fatal to the young. The preventive medicine of the future must study the causes of the organic changes of later life and, learning these, discover upon what depended the accomplishment of their prevention.

Dr. Janeway explained the purpose of the institute, which it was hoped would be established, as twofold: First, research into the problems of disease and more especially the diseases of advanced life; and, second, the improvement of the city's poorest sick and aged in two of its largest institutions. "These two purposes," he went on to say, "are not distinct, but are closely related, and of the two, I believe the second to be the more important, though to be attained only through the accomplishment of the first. New buildings in prospect, especially a building for the housing of the medical staff, will so much further improve conditions as to make the service of the City Hospital a much more attractive one to young physicians. Four years ago the City Hospital had a pathological laboratory, but no pathologist; some one from the city or some member of the attending staff making the autopsies, and the vast material of the institution being wholly lost to science. The facilities for the application of careful laboratory methods for the diagnosis of the patient's ailments were also very poor.

"At that time the present pathologist, Dr. Oertel, was appointed by Mr. Folks, who was then

Commissioner of Public Charities. For four years he has given his time unreservedly to the building up at the City Hospital of a modern pathological department, modeled after the best German institutes. One year ago he was made pathologist also of the City Home and has since then had charge of the pathological work of both institutions. During this time his constant presence, his teaching of the staff and his example of thorough and self-sacrificing scientific work have immensely raised the character of all the work done throughout the institution and have, more than anything else, contributed to improve the care of the patients in all departments of the hospital. He has also trained men in pathology who have left him for other positions. During all this time he has served the city absolutely without salary, and his assistants, as well, have not received a cent for their services. On such a basis further development is impossible, for men cannot work indefinitely for nothing. There are two alternatives, — first, the attempt to have the city put the pathologist and his assistants upon salaries; second, the endowment of an institute by private beneficence."

ENDOWMENT OF RESEARCH IN MUNICIPAL INSTITUTIONS.

In the foregoing statement of the endowment by Mrs. Russell Sage of a pathological laboratory in connection with the almshouse hospitals of New York, attention is directed to several matters which are worthy of more extended comment.

In the first place, this is the first time in this country, so far as our knowledge goes, in which a large sum of money has been given for the purpose of stimulating investigation in institutions under the immediate control of a city government. It is proverbial that it is difficult to obtain funds for institutions other than those which are governed by private or semi-private interests. The reason for this is, of course, obvious, inasmuch as the changing policies of our rapidly changing city governments might well lead to embarrassment and even to a misappropriation of such funds. In the instance before us this has evidently been guarded against and the co-operation of the city government and charity organizations have been secured to the common end of applying this large sum of money to a definite and highly useful purpose.

In the second place, it is apparent to those who have had any experience in great city institutions that in these hospitals is contained a vast amount of material for study which has in the past too often been neglected and ignored. The possibility which this bequest offers of studying particularly the diseases of advancing life is one which is sure to bring results ultimately of the greatest possible value to the progress of medical science and to the alleviation of suffering. As one walks through the wards of a hospital for chronic diseases, one is impressed with the vast number of conditions which our present knowledge permits us merely to alleviate; one is also struck with the possibilities which these same conditions present, grouped in great numbers, of getting somewhat nearer to the sources and the causes of the distressing and destructive diseases of the latter period of life. The enthusiasm of the past two decades has been largely expended in the study of bacterial diseases with results which every one recognizes and appreciates. There has been no limit set to the possibilities of research along this line, but evidence is accumulating that the attention of many investigators is about to be directed to the still more subtle problems underlying body metabolism and the significance of chronic disease. It is not for a moment to be expected that results in this great field will come quickly, but for this very reason it is time that the medical world should bestir itself toward framing the problems to be solved and toward tabulating the enormous material awaiting study.

It is, therefore, with peculiar gratification that we make note of this unique bequest of Mrs. Sage. The example which it has set should be followed in every large city where its hospitals for chronic disease are crowded with patients, well cared for, no doubt, but on the whole regarded as a hopeless class for whom death can be looked upon only with satisfaction. One of the great steps in progress in the immediate future is, inquestionably, destined to be the utilization of these repositories of chronic disease for the solution of many of the most fundamental problems of medicine. Every effort made toward the improvement of our almshouse hospitals is a step in this direction. New York is evidently destined to lead in this movement, but it will not prove difficult for other cities to follow its example in greater or less degree in developing from every standpoint their municipal hospitals devoted to the care of persons suffering from chronic disease. As we have frequently had occasion to say, Boston has for upwards of ten years been developing its almshouse hospital on Long Island, with gratifying results. The value of the hospital has long since been amply demonstrated.

BOSTON FLOATING HOSPITAL.

THE Boston Floating Hospital has this week begun its season's work under much more favorable conditions than in previous years. Unquestionably this hospital, like those of similar sort in other cities, has completely proved its usefulness as a means of alleviating the diseases of infancy during the summer months. As we have before had occasion to note, a new boat which was in use a part of last year is to be used this summer with improved equipment. For example, this year a refrigerating plant has been put in and the boat will also be propelled by its own engine. The staff of the hospital has been somewhat altered over last year and insures an admirable service.

MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 3, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 32, scarlatina 33, typhoid fever 9, measles 65, tuberculosis 51, smallpox 0.

The death-rate of the reported deaths for the week ending July 3, 1907, was 16.94.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 29, 1907, was 214, against 173 the corresponding week of last year, showing an increase of 41 deaths and making the death-rate for the week 18.53. Of this number 119 were males and 95 were females; 208 were white and 6 colored; 128 were born in the United States, 78 in foreign countries and 8 unknown; 40 were of American parentage, 150 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 34 cases and 2 deaths; scarlatina, 28 cases and 2 deaths; typhoid fever, 11 cases and 1 death; measles, 79 cases and 6 deaths; tuberculosis, 43 cases and 25 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 18, whooping cough 2, heart disease 24, bronchitis 5 and marasmus 1. There were 18 deaths from violent causes. The number of children who died under one year was 43; the number under five years, 66. The number of persons who died over sixty years of age was 37. The deaths in public institutions were 79.

There were 3 cases and 4 deaths reported from cerebrospinal meningitis during the week.

DR. HENRY P. WALCOTT HONORED. — Dr. Henry Pickering Walcott, Chairman of the Massachusetts State Board of Health, and Member of the Corporation of Harvard University, received the honorary degree of Doctor of Laws from Yale University at its recent commencement.

APPOINTMENT OF CAMBRIDGE MILK INSPECTOR. — Dr. Ernest H. Sparrow has been appointed by Mayor Wardwell milk inspector of Cambridge, Mass. Dr. Sparrow succeeds Dr. Norris in this office. He is a recent graduate of the Harvard Medical School and has served as house officer at the Cambridge Hospital.

DR. H. W. MITCHELL, SUPERINTENDENT OF THE EASTERN MAINE INSANE HOSPITAL. — Dr. H. W. Mitchell has been appointed superintendent of the Eastern Maine Insane Hospital at Bangor. Dr. Mitchell has for some years been first assistant physician at the Danvers (Mass.) Insane Hospital and has there shown himself a man of exceptional ability and executive capacity.

NEW YORK.

A CENTENARIAN. — It is reported that Mrs. Rosa Harrison died in Trenton, N. J., last week at the age of one hundred and four years. She was a Russian by birth and claimed to have had a distinct recollection of Napoleon's invasion of that country.

OPENING OF SANITARIUM FOR HEBREW CHILDREN. — The Sanitarium for Hebrew Children at Rockaway Park, on the Long Island coast, was opened for the season on June 19. Some two hundred infants and young children were taken on a sail to the institution, and a few of the more serious cases were put in the hospital wards for treatment.

ANTI-SMOKE LEAGUE. — The Anti-Smoke League, of which Charles T. Barney is president, which has been carrying on an active campaign against the large manufacturing and other concerns which pollute the atmosphere of the city, recently established a plant of its own for experimental purposes. The results attained there have been pronounced most satisfactory both by Dr. Walter Bensel, Sanitary Superintendent of the Health Department for Manhattan, and, from the economic side, by J. P. Sparrow, Chief Engineer of the New York Edison Company. By using the new smoke-consuming apparatus and cinder appliances it is found that coal burns with 15% greater efficiency than by the ordinary method of burning it, which creates a nuisance.

A Black List. — At a meeting of the Medical Society of Mercer County, N. J., in which the city of Trenton is located, held on June 22, a resolution was adopted, establishing a "black list," to be kept by the secretary, to which every member of the society is pledged to contribute the names of all persons who avoid paying for professional services.

Honorary Master of Arts for Dr. E. B. Cragin. — Among those who received the honorary degree of Master of Arts at the recent commencement of Yale University was Dr. Edwin Bradford Cragin, Professor of Obstetrics in the College of Physicians and Surgeons, New York.

Health of School Children. — Dr. W. H. Maxwell, superintendent of the public schools, has sent out a circular to all the school principals under his jurisdiction, requesting them to report early in July on a series of questions relating to various phases of the health of the children in their schools. They are asked especially to report on cases of physical defects, and among others specified are malnutrition, chorea, hypertrophied tonsils and defective vision, hearing, speech and mentality. They are also asked to state how valuable they consider the work of the school nurses.

Quiet Zones. — The Board of Aldermen has passed an ordinance establishing "quiet zones" for hospitals in the city, to be indicated by signs at the street corners in the vicinity of these institutions. Under its provisions teamsters and motormen must conduct their vehicles through street blocks within these zones slowly and quietly and motormen may not ring their gongs except in case of danger. Children must not play in the streets, peddlers are forbidden to hawk their wares and no noise which might disturb patients must be made. The Health Commissioner first advised the placing of signs in the vicinity of the hospitals, and the ordinance was introduced and carried to a successful issue through the efforts of the newly organized Society for the Suppression of Unnecessary Noise. The superintendents of fourteen hospitals signed a petition for the passage of the measure and it also received the cordial support of the police department.

Deaths in Three Months. — The quarterly condensed report of the Bureau of Records of the Health Department shows that the number of deaths in the city during the quarter ending March 31, 1907, was 21,182, representing an annual death-rate of 20.06 per thousand of the population, as against an average of 19,539 deaths for the corresponding quarters of the preceding five years and a death-rate of 20.30 per thousand. There was thus a decrease of .24 of a point in the death-rate. If the number of deaths from the principal causes and at certain age-groups are compared with those of the preceding quinquennial averages, corrected to correspond with the increase in population, the following decreases and increases are found: Decreases, — malarial fevers, 11; smallpox, 29; measles, 194; scarlet fever, 93; diphtheria, 113; tuberculous diseases other than pulmonary, 52; meningitis, 117 (of which 76 were epidemic cerebrospinal meningitis); apoplexy, 90; acute bronchitis, 266; bronchopneumonia, 292; Bright's disease and acute nephritis, 165; old age, 74; suicides, 39; deaths under five years of age, 697; deaths at all ages, 259. Increases, — typhoid fever, 9; whooping-cough, 12; influenza, 143; pulmonary tuberculosis, 102; cancer, 88; organic diseases of the heart, 389; chronic bronchitis, 18; lobar pneumonia, 315; diarrheal diseases under five years of age, 109; accidents, 139; homicides, 32; deaths between 5 and 65 years of age, 145; deaths at 65 years and over, 298. The increase in the deaths from pulmonary tuberculosis, notwithstanding the progressively increased activity in the warfare against that disease, is not very re-asssuring; but, on the other hand, it is gratifying to note the diminished mortality from Bright's disease and among children under five years of age.

Instruction to Mothers in Care of Infants. — John D. Rockefeller has provided the funds for the establishment and maintenance of a corps of twenty trained nurses, whose duty it shall be to give instructions to mothers in the proper care of their infants. The proposed system is to be carried out under the auspices of the New York Association for Improving the Condition of the Poor and with the co-operation of the city Health Department and Board of Education. The corps of nurses is to be divided into two sections of ten each. One of these will organize classes for practical instruction to mothers in the district between Thirty-ninth Street and Eighty-ninth Street and Fifth Avenue and the East River, in which the Rockefeller Institute is situated. This territory comprises fifty blocks in all, and one nurse will be assigned to work in each five blocks. The ten nurses of the other section are to be stationed at the recreation piers and at the "Junior Sea Breeze," a plot of nearly six acres on the East River, belonging to the Rockefeller Institute,

where the Association for Improving the Condition of the Poor maintains a playground and hospital camp for sick babies during the summer. The work of all the nurses will be under the direction of Mrs. Helen Ingram, superintendent of the relief work of the Association. The Health Department has agreed to assign a physician to each of the city's recreation piers during the summer months, to act in conjunction with the nurses in educating mothers how to treat their babies when they show signs of illness. The Board of Education is to provide a kindergarten teacher for each pier, whose duty it will be to take care of and amuse the older children, thus allowing the mothers to give more attention to their infants. The daily work of the ten nurses assigned to the territory of fifty blocks will be to visit the families in the district, see every mother of every child under two years of age and give such advice and instruction as may be required. Where a sick baby is found without medical attendance, a physician will be furnished promptly and the nurse will make as many calls as necessary to help the mother in the care of the child. This house-to-house visitation will thus be supplementary to that of the summer corps of physicians of the Health Department in the limited section of the city mentioned. The ten other nurses will visit the tenement houses in the vicinity of the recreation piers and explain to mothers the benefits of fresh air and urge them to go with their children to the piers as much as possible. In connection with the Caroline Rest, a convalescent home for mothers and new-born infants at Hartsdale, Westchester County, the Association for Improving the Condition of the Poor now has a staff of visiting nurses for maternity cases in the tenement houses, in which the women have no monthly nurses of their own.

Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. JUNE 8, 1907.

1. *BRYANT, J. D. *The American Medical Association. Its Aims and Interests.*
2. HERRICK, J. B. *The Relation of the Clinical Laboratory to the Practitioner of Medicine.*
3. WATHEN, W. H. *Acute Suppurative Peritonitis.*
4. DIXON, S. G. *Law the Foundation of State Medicine.*
5. *BALLENGER, E. G. *Diagnosis of Diseases of the Prostate.*
6. *BEER, E. *The Diagnosis of Pyelonephritis Based on the Abnormal Retention and the Delayed Excretion of Methylene Blue.*
7. *SIMON, C. E. *Meningococcus Septicemia.*

1. In his President's address before the American Medical Association, June 4, 1907, Bryant discussed the aims and interests of the Association, enumerating them as stated in its constitution, and giving particular attention to such as are of special importance at the present time. The uniting of the profession into one compact organization is progressing rapidly and its advantages if wisely directed are noted. The opportunity and duty of every physician to contribute his share to the healthy growth and wise diffusion of medical knowledge, and especially the opportunities of the country practitioner in observing the different effects of environment on urban and rural patients are mentioned. The subject of medical education and its present deficiencies and needs and more particularly the inadequacy of its endowment as compared with education for the other learned professions is remarked, and it is hoped that substantial improvement can be secured through the convincing influences that can be brought to bear on the public mind. "The promoting of friendly intercourse among American physicians" is regarded by Bryant as the most important announcement in the opening declaration of the aims of the Association, and one that tends most to counteract any possible evil from selfish interpretations of the "material interests of the profession." He knows of no agent so well calculated to contribute to the fostering of the growth and the diffusing of medical knowledge as *The Journal of the American Medical Association*, hence the importance that the tone and wisdom of its utterance be always in accord with the sense of justice of the majority of the profession. How the wellbeing and unity of the medical profession is associated with the welfare of the community in general in the war against disease is noticed and the establishment of a national department of health is favored by Dr. Bryant. The question of reciprocity in medical practice requirements is touched on, and the suggestion made that the examinations should duly consider the experience of the applicant rather than insist too exclusively on modern requirements. As regards medical education, the suggestion, at least, is offered that it may be possible to attempt to realize too strenuous ideals, and that it may be better for the great majority of our medical institutions to "broaden the basis of instruction in established professional knowledge and usefulness rather than risk indulgence in any form of whimsical expediency or of questionable propriety in educational requirements." The pure drug question in the light of recent developments is discussed, as well as the proprietary and patent medicine revelations, and the work of the Council on Pharmacy and Chemistry of the American Medical Association is highly commended. It is also suggested that a careful scientific consideration of the mineral springs of the country would be similarly useful. In closing, the civic duties of the medical profession are alluded to, and warning given against the dangers of a growth of a spirit of paternalism, which is a frequent by-product of organized power.

5. Ballenger's article aims to combat the general lack of definite knowledge of the diseases of the prostate. These diseases he enumerates and classifies. Most attention is devoted to chronic prostatitis, in which the largest number of diagnostic errors are made. The reason for this is that most physicians rely upon palpation alone and do not realize that chronic inflammation may exist without enlargement or other palpable abnormality. In such cases the diagnosis may be made by examination of prostatic secretion as obtained by massage, pure or diluted with urine. In this secretion two elements if present are diagnostic; pus and proteid substances, albumin, globulin or albumose, detected by the appearance of a white ring on addition of saturated $MgSO_4$ (9 parts) and HNO_3 (1 part). Pus or proteid in fluid passed after prostatic massage, but absent from that passed before massage renders the diagnosis of prostatitis positive.

6. In a preliminary communication, Beer publishes the histories of two cases which seem to point to a new diagnostic sign of the involvement in suppuration of the kidney parenchyma. In the first case the patient discharged methylene blue stained pus in the urine at intervals up to two and three-fourths years after the last administration of the drug. The second patient had pyelonephritis (verified by nephrotomy) and had recurrent discharges of methylene blue stained pus over a month after the last administration of the drug. He produced a pyelonephritis in a dog and then for several days administered methylene blue. The kidney was removed two weeks later and, after treatment with oxidizing agents, showed multiple bluish gray pus foci throughout its substance. He summarizes

his conclusions derived from the facts so far as follows: (1) There is no differential diagnostic sign between simple pyelitis and pyelonephritis. (2) Pyuria from the upper urinary tract may be due to either of these conditions. (3) By use of the above described methylene blue test it would seem that a differential diagnosis may be made. (4) Methylene blue is deposited in the parenchymatous abscesses and may be stored in these for years. (5) A late discharge of methylene blue, bound to the pus, is indicative of the rupture of such parenchymatous abscesses into the pelvis of the kidney and is consequently diagnostic of pyelonephritis.

7. Simon reports a case of meningococcus septicemia in which meningococci were demonstrated in smears of blood obtained from the ear. Eight cases are on record where meningococci have been obtained by blood-culture. [F. W. P.]

MEDICAL RECORD.

JUNE 8, 1907.

1. BRYANT, J. D. *The American Medical Association, Its Aims and Interests.*
2. BRYANT, W. S. *The Eustachian Tube, Its Anatomy and Its Movements.*
3. HEISER, V. G. *Leprosy in the Philippine Islands and the Present Methods of Combating the Disease.*
4. *EINHORN, M. *A New Blood Test.*
5. CROTHERS, T. D. *Some Effects of Spirit and Drug Taking on the Upper Air Passages.*

4. Einhorn describes a new modification of the benzidin test for blood in the stomach contents, feces and urine. It consists of testing with paper sensitized by the use of benzidin. The paper is immersed in the solution to be examined and a few drops of peroxide of hydrogen are added, when a blue color is formed if blood is present. The blue or green color appears in a few seconds and we should not wait more than a minute for the reaction to appear, as after that the color may appear from the presence of other substances than blood. HCl may cause the reaction after two or three minutes. The benzidin test can be recommended as a preliminary test: a strong reaction or no reaction at all gives a reliable test. [F. W. P.]

NEW YORK MEDICAL JOURNAL.

JUNE 8, 1907.

1. * TAYLOR, R. W. *Deformities of the Penis Due to Syphilis, Gonorrhea and Other Causes.*
2. *KEPPLER, K. R. *Weak Foot and Its Treatment.*
3. CARLING, J. *Open-Air Treatment of Tuberculous Bone and Joint Disease.*
4. VAUGHAN, G. T. *Some Rare Forms of Hernia.*
5. ROYSTER, L. T. *The Illegimately Pregnant Woman from a Sociological Standpoint.*
6. GORDON, A. *Amyotrophic Lateral Sclerosis with Bulbar Onset.*
7. ALGER, E. M. *A Case of Eyestrain Mistaken for Appendicitis and Cholelithiasis.*
8. BEERS, N. T. *Impetigo Contagiosa.*

1. Taylor discusses at length a large number of types of deformity of the penis, including the indurating edema of syphilis, most commonly accompanying the hard chancre, deformities from tertiary syphilitic lesions and changes of the type of elephantiasis. The etiology of this last condition is probably complex; gonorrheal urethritis probably plays a part and secondary infections may be a factor. Some cases follow trauma or operations for the removal of inguinal glands. The clinical appearances and the microscopic pathology of the abnormalities described are shown by illustrations.

2. Keppler calls attention to the lack of care too commonly shown in the treatment of weak foot. Of this disorder three common types are described: the painful weak foot without deformity, the deforming weak foot without spasm and the spastic deforming weak foot. The treatment must be long continued, six to ten months being the average time demanded. The first essential in prophylaxis as well as in treatment is to obtain proper shoes. Next, to correct the disorder already present, the general tone of the foot structure is to be improved by active exercises, which are described, by manual manipulation, and by the use of mechanical apparatus, especially valuable in advanced types combined with spasm. During this treatment what gain is made is to be retained by supports, best by the Whitman plate fitted to plaster casts and corrected at stated intervals as improvement occurs. The worst cases may require operation by open incision, but before resorting to this, it is well to try correction by manipulation under an anesthetic, followed by retention in a plaster of Paris dressing for four to six weeks, followed in turn by treatment with exercises and plates as in ordinary cases. [F. W. P.]

THE LANCET.

JUNE 8, 1907.

1. *GOWERS, W. R. *Vagal and Vaso-vagal Attacks.*
2. WELSH, D. A. *The Nature of Infectivity in Relation to Tumour Growth.*
3. SLOAN, S. *Some Physiological Effects of High-Frequency Currents in Disease.*
4. MURPHY, S. F. *Variations in the Age Incidence of Mortality from Certain Diseases.*
5. HOLT, M. P. *Ligature of the Renal Vessels by the Transperitoneal Method for the Cure of Persistent Urinary Renal Fistula, with Notes of One Successful Case.*
6. GATES, E. A. *Two Cases of Infection by the Paratyphoid B. Bacillus.*
7. SALE, J. C. *A Case of Recurrent Pneumothorax.*
8. BUCHANAN, R. M. *On the Differentiation of the Meningococcus from Other Gram-Negative Diplococci in the Nasopharynx of Cerebrospinal Contacts.*

1. Gowers gives the term " vaso-vagal attacks " to certain prolonged seizures, the symptoms of which consist chiefly in the disturbance of some of the functions of the pneumogastric, for the most part sensory and subjective. There may be slight mental change and disturbance of the vaso-motor center, causing constriction of the vessels and coldness of the extremities and occasionally some sensory impairment and slight tetanoid spasm. Attacks are usually one-half hour or more in length. The onset is sudden and the ending gradual. These cases are generally confused with forms of hysteria. The characteristic vagal symptoms are chiefly sensations referred to the stomach, heart or respiratory system. There is seldom any real loss of consciousness, but merely a slowing of the mental processes. He gives details of 11 cases. The treatment consists of general measures to strengthen the constitution. [J. B. H.]

BRITISH MEDICAL JOURNAL.

JUNE 8, 1907.

1. *MURRAY, H. M. *Acute Pneumonia in Children.*
2. BARDSWELL, N., and ADAMS, B. *Remarks on Complete Vocal Rest During the Sanatorium Treatment of Laryngeal Tuberculosis.*
3. GUNN, R. M. *The Value of Ophthalmic Symptoms in General Diagnosis and Prognosis.*
4. *PHILLIPS, S. *Acute Colitis and Ulcerative Colitis.*
5. DOW, A. *A Case of Tuberculous Meningitis in a Boy Treated with Tuberculin; Recovery; Recurrence and Death.*

1. Murray urges a more careful study of the respiration rate in pneumonia in children; he thinks a record of this is of far more importance than that of the pulse or temperature. He differs with other authorities who attempt to classify pneumonias of childhood into distinct groups, and believes that this is not only a waste of time but an actual impossibility, as the different types vary so very greatly. He believes in estimating the individual value of each sign and symptom on prognosis and treatment, rather than placing the case in some hypothetical group by means of these signs and symptoms and then dealing with the prognosis and treatment of that group as a whole. He analyzes 54 consecutive cases under his care.

4. Phillips presents 12 cases of acute or subacute colitis in detail, with a careful consideration of symptoms, complications and sequelae, among which he mentions a marked tendency to embolism in distant organs, usually after the acute stage has subsided. Anemia of a very intense and lasting nature is apt to follow. No specific

organism has as yet been discovered. He considers it a grave and dangerous disease, with the prognosis always in doubt. In treatment he strongly recommends mercury in small doses, combined with opium if it produces purgation. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, No. 20.
MAY 16, 1907.

1. SEIFERT, O. *Treatment of Acute Catarrh of the Upper Air-Passages.*
2. *HIRSCH, C., and SPALTEHOLZ, W. *The Coronary Arteries and the Heart Muscle.*
3. HELLER, O., and TOMARKIN, E. *Practicability of the Method of Absorption of the Complement for the Detection of the Specific Substances of Rabies and Vaccinia.*
4. GUTMANN, A. *Relation of Diseases of the External Eye to those of the Nose.*
5. HERZOG, H. *Tracheal Diphtheria.*
6. LEWANDOWSKY, F. *A Case of Skin Disease Resembling Impetigo, caused by Demodex Follicularis Canis.*
7. HÜBENER. *A Case of Infection with Bacillus Pyocyaneus.*
8. *MORELLI, G. *A Case of Primary Cancer of the Lungs.*

2. Hirsch, avoiding pneumothorax by modern operative methods, was able to ligate the descending branch of the left coronary artery in 8 dogs and 2 monkeys, without affecting the heart beat, except some transitory arrythmia at the moment of ligating the artery. These animals lived in apparently normal condition and without any signs or symptoms referable to the heart. After 2, 3 and 4 weeks they were killed and the hearts examined anatomically. In all the experiments with dogs a small myomalaceous infarct was found at some distance from the point of ligature toward the apex. In no case did the infarct correspond to the entire area supplied by the ligated artery. Spalteholz, through a special injection method, which he has used successfully in tracing the circulation of the small arteries in the muscles and skin, was able to prove that the coronary arteries are not terminal arteries in the sense of Cohnheim, but that they anastomose freely with each other, in a network near the heart surface and also with the vasa vasorum, in an arrangement very similar to that he has described as occurring in embryonic smooth muscle tissue. Where the myocardium is thick, branches from the superficial net work descend and anastomose freely under the endocardium. Each papillary muscle contains numerous arteries which anastomose with one another. The coronary arteries in the dog are arranged in a similar manner to those of man. One dog died of hemorrhage from the wound and was found to have a red infarct corresponding to the whole region supplied by the artery, showing that the weakened heart muscle had not the strength necessary to establish the collateral circulation. This would seem to indicate the need of employing quick-acting heart stimulants in cases of angina pectoris with a low blood-pressure in order to limit the area of possible infarct by increasing the collateral circulation. The experiments on monkeys were not so striking anatomically, owing to slight differences in the anastomosing of the arteries. The article is accompanied by some very excellent illustrations.

8. Morelli reports, with pathological examination, a case of primary cancer of the lungs, interesting in that it occurred in a young man of 28 years, without metastases and developed bilaterally. Microscopical examination made it most probable that it originated in the epithelium of the bronchial glands.

[L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT, No. 19.
MAY 7, 1907.

1. *DEUTSCHMANN, R. *A New Serum for Infectious Diseases.*
2. *RITTER, C. *The Pathogenesis of Frost-bite and its Treatment by Artificial Hyperemia.*
3. CRÄMER. *The Effects of Nicotin, Coffee and Tea on Digestion.* (Continued article.)
4. *BRENTANO. *The Surgical Treatment of Ileus Due to Gall-stones.*
5. *BRUNS, H. *Remarks on Anguillula Intestinalis.*
6. ROITH, O. *Does the Spinal Injection of Stovain Affect the Intestinal Peristalsis?*
7. *WAELSCH, L. *A Case of Atoxyl Poisoning.*
8. ARNDT, G. *A Glove for Electric Massage.*

1. Repeated injections of yeast render animals less susceptible to microbic infections. Deutschmann has found the serum of such animals to possess marked curative properties for various infectious diseases of man. This action is presumably due to protective substances. In pneumonia an evident effect was manifest in one half of 21 cases, the temperature fell rapidly and convalescence set in. The serum is also very useful in infections of the eye, for which it was originally intended. The pneumonia charts which illustrate the article show a striking fall of temperature soon after the injection, but the number of observations is too small to prove the value of the serum.

2. The hyperemia occurring after the application of cold to the skin is due, according to Ritter, not to the cold itself, but to the damage to the tissues. It is a sign of the need of the tissues for more blood and is, therefore, to be encouraged, not combated. That it is not merely the result of dilatation of the arterioles is shown by the fact that local anemia caused by adrenalin is not followed by hyperemia. The attraction of the necrotic tissues for blood is apparently a biological phenomenon and not merely reflex, for hyperemia occurs after freezing, when all the nerves to the part have been cut. Active and passive hyperemia are not opposed to one another, but serve the same purpose, the former, to be sure, more effectively. Thus active hyperemia is the rule after freezing, but venous congestion is seen when there is a lack of arterial blood. Ritter's therapeutic researches have shown that in chronic frost-bite the production of arterial hyperemia by means of hot air is a sovereign remedy, leading to cure in a short time. It should be employed at high temperatures for ½ to 1 hour daily, the patient being carefully watched on account of the danger of fainting. For acute frost-bite, passive congestion by the elastic bandage is to be preferred. It causes rapid relief of the pain and itching, healing of the ulcers and prompt demarcation of gangrenous areas. The bandage should be applied for 6 to 12 hours daily, taking care that the part should show *increased* heat and a bright red color. In anemic persons a previous application of hot air enables one to obtain the proper congestion with the bandage. The judicious use of hyperemia is thus, according to Ritter, the best method of treating both acute and chronic frost-bite.

4. Brentano relates a case of ileus in which a very large gallstone was removed from the ileum by operation; a second equally large stone came down from the gall-bladder ten days later and caused fatal peritonitis by stretching the stitches at the site of the previous enterotomy. A round facet on the proximal part of the first stone indicated that a second remained behind. Brentano recommends that in intestinal obstruction due to gallstones the intestine be palpated for further stones and that, if facets are present, the gall bladder be opened also.

5. Bruns reports 3 cases of anguillula infection in man and gives a thorough description of the parasite. Its place in pathology is still a matter of dispute, its practical importance is slight on account of its rarity, in temperate climates at least.

7. Atoxyl, or met-arsenious acid-anilid, was introduced into the treatment of skin diseases as a non-toxic arsenic compound. Waelsch's case of poisoning after the administration of 2.6 gm. atoxyl in 27 injections, and several other cases from the literature, show that it is not so harmless as has been claimed. The symptoms consisted of a mixture of arsenic and anilin poisoning, consisting of malaise, pains, fever, headache, conjunctivitis, cough and strangury. The patient recovered. [W. T.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 16.
APRIL 22, 1907.

1. GOLDSCHEIDER. *The Conception of Adaptability (Zweckmässigkeit) in the Theory of Disease.*
2. SACHS, H., and YUTAKA, TERUUCHI. *The Inactivation of the Complement by the Withdrawal of Salt.* (Continued article.)
3. JOSEPH, J. *On Rhinoplasty.*

4. Blumenthal, M. *A Case of Congenital Malformation of the Fibula.*
5. *Zuelzer, G. *Experimental Researches on Diabetes.*
6. *Fellner, B., and Rudinger, C. *The Examination of the Heart's Function.* (Concluded.)
7. *Benda, C. *The Levaditi Method for Staining the Spirocheta Pallida.* (Concluded.)

5. This is an interesting study by Zuelzer on the nature of the glycosuria produced by the injection of adrenal extract. He passed defibrinated normal dog's blood through the livers of dogs, and found that in the case of normal livers the increase of sugar in the blood after the passage was about 12%; that with livers after the injection of adrenal extract was 50% to 113%; that with livers of dogs with extirpated pancreas was 66%. The hypothesis was formed that normally the adrenal secretion is neutralized by pancreatic secretion and that in pancreatic diabetes it is the lack of this neutralization which allows the adrenal secretion to act on the economy in full force and to produce glycosuria. Further experiments lent a certain support to this view, for by simultaneous injection of pancreatic extract he was able in every instance to prevent the adrenal glycosuria. Moreover, Zuelzer succeeded in 2 dogs in preventing the glycosuria following extirpation of the pancreas by ligating the suparenal veins; the dogs lived 36 hours after operation. His results certainly suggest the possibility of some relation between the adrenals and the pancreas in pancreatic diabetes.

6. Fellner and Rudinger report the results of tests of the cardiac function in 70 cases by Katzenstein's method. This consists in the comparison of the blood pressure before and during compression of both femoral arteries. They confirm in the main Katzenstein's statements and recommend the method for use in conjunction with the usual methods of examination. They found that the normal heart responds to compression by a rise in pressure of 5–10 mm; with the sufficient hypertrophic heart the increase is greater, up to 20 mm. A stationary pressure or a fall in pressure is a sure sign of cardiac weakness, which may be assumed also in the case of hypertrophic hearts if the rise is only slight, say 5 mm. In chlorosis, anemia and tuberculosis, diseases in which cardiac weakness has been assumed but not proven, they found a notable decrease in pressure during compression. Contrary to Katzenstein, they were unable to find any constant relation of the pulse rate to compression. [This new method of estimating objectively the function of the heart deserves further trial. It is not adapted to very sick cardiac patients, in whom the sudden increase of peripheral resistance may prove disastrous. W. T.]

7. Benda offers convincing proof that the "silver spirochete" is really a spirochete and not, as Schulze and Saling claim, merely connective tissue, nerve, or elastic fibers. He demonstrates that the central "giant-cell-like" area in the miliary gumma of congenital syphilis consists of a mass of spirochetes, thus offering important anatomical evidence of the etiological rôle of the spirocheta pallida.

Miscellany.

CHRISTIAN SCIENCE AND THE LAW.

Clarence W. Byrne, the Christian Scientist, who was arrested some time ago, at the instigation of Coroner Acritelli, for permitting his daughter, a child of six years, to die of bronchopneumonia, on May 4, without medical attendance, was found guilty, on June 28, 1906, in the Court of Special Sessions, of violating that section of the Penal Code which makes it a misdemeanor for a parent or guardian to fail to provide medical attendance for a minor. The penalty for this offense is imprisonment for a year, a fine of $500, or both of these; but sentence was postponed until July 12, on motion of counsel for the defense, in order to allow briefs for a new trial to be filed. This case is one of special interest, from the fact that on the day when it first came up for trial, July 11, Justice Denel, before whom it was to be tried, decided to dismiss it, on the alleged ground that "the law under which this defendant was arrested had been nullified and superseded by a more recent one, giving Christian Scientist healers the right to practice healing." At the request of the prosecuting attorney, however, the judge consented to postpone the trial until the following day, in order that the points of law involved in this ruling might be investigated. On the next day it was successfully argued by the prosecution that even if the contention thus made were now valid, it did not apply to the case of Byrne, from the fact that his child died nine days before the new legislation on medical practice went into effect. In the bill recently passed by the legislature, which was commonly known as the medical unification bill, but the correct title of which was "An act to regulate the practice of medicine," it is provided that "no person shall practice medicine unless registered and legally authorized to do so"; but a paragraph in the new law, it appears, is devoted to certain exceptions and in this it is stated that "the law shall not be construed to affect the practice of the religious tenets of any church." As to whether this section of the law applies to Eddyite healing, and, if so, how far it affects the force of previously existing statutes, such as the one under which Byrne was convicted, has not yet been settled by any decision in the courts.

Correspondence.

DAVIS MEMORIAL FUND.

Boston, June 26, 1907.

Mr. Editor: At the last annual meeting of the Massachusetts Medical Society the Councilors voted to appropriate three hundred dollars towards the Davis Memorial Fund, provided not less than two hundred dollars was raised by private subscription. A considerable portion of this amount has already been subscribed, and through you permit me to invite additions to this fund in such sums as the members of the Massachusetts Medical Society feel disposed to contribute. All subscriptions sent to me will be duly acknowledged.

The character of the Memorial will be determined by the officers of the American Medical Association.

The committee desire that this memorial to Dr. Davis shall be shared in by the profession in general, since to Dr. Davis we are indebted for the founding of the American Medical Association and its present exponent, the journal of the association, now the leading medical journal of the world. To him also in large degree is due the organization of some of the state societies and the development of medical education to its present high standard in America. Although justly celebrated as a practitioner of medicine, a teacher, a writer of textbooks and the founder of two great medical schools, he is pre-eminent above all others as the great organizer of the medical profession in America. To such a memorial the medical men of this country are gladly furnishing their contributions. Massachusetts honors herself in honoring this great pioneer in the development and the carrying to a high standard the medical profession in the West.

Truly yours,

Henry O. Marcy, M.D.,
Chairman of the Committee.

180 Commonwealth Ave., Boston.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 22, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,426	447	Quincy	5	2
Chicago	—	—	Waltham	10	1
Philadelphia	—	—	Pittsfield	11	—
St. Louis	—	—	Gloucester	5	—
Baltimore	173	52	Brookline	10	1
Cleveland	—	—	North Adams	10	2
Buffalo	—	—	Chicopee	4	2
Pittsburg	—	—	Northampton	14	2
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	2	1
Providence	63	17	Hyde Park	1	—
Boston	204	64	Melrose	4	—
Worcester	50	12	Newburyport	—	—
Fall River	35	19	Woburn	6	1
Cambridge	22	5	Marlboro	3	1
Lowell	37	9	Westfield	5	—
Lynn	21	3	Peabody	—	—
New Bedford	17	6	Revere	—	—
Springfield	22	9	Attleboro	—	—
Lawrence	23	4	Clinton	4	2
Somerville	15	2	Adams	3	1
Holyoke	19	4	Gardner	—	—
Brockton	10	2	Milford	—	—
Malden	11	3	Watertown	3	0
Chelsea	13	3	Plymouth	—	—
Salem	8	1	Weymouth	2	—
Newton	8	1	Framingham	3	1
Haverhill	6	1	Southbridge	2	—
Fitchburg	—	—	Wakefield	—	—
Everett	3	1	Webster	—	—
Taunton	18	2			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JUNE 29, 1907.

E. H. MARSTELLER, surgeon. Unexpired portion of sick leave revoked, and ordered to the Naval Recruiting Station, Baltimore, Md., July 1.

G. M. MAYERS, passed assistant surgeon. Detached from the "Marietta" and ordered to the "Ohio."

I. S. K. REEVES, passed assistant surgeon. Detached from the "Franklin" and ordered to the "Marietta."

J. T. KENNEDY, passed assistant surgeon. Detached from course of instruction at the Naval Medical School, Washington, D. C., and ordered to Danville, Va., for duty with recruiting party No. 3.

R. C. HOLCOMB, passed assistant surgeon. Detached from course of instruction at the Naval Medical School, and ordered to the Naval Hospital, Norfolk, Va.

H. L. BROWN, assistant surgeon. Detached from course of instruction at the Naval Medical School, and ordered to the Naval Recruiting Station, Oklahoma, Okla.

R. G. HEINER, assistant surgeon. Detached from course of instruction at the Naval Medical School, and ordered to duty with Marine Detachment at Camp Harrington, Williamsburg, Va.

F. E. PORTER, assistant surgeon. Detached from the "Rhode Island," and ordered to the "Franklin."

B. F. HAINES, acting assistant surgeon. Ordered to Naval Hospital, Philadelphia, Pa.

D. H. CASTO, acting assistant surgeon. Detached from the Naval Recruiting Station, Baltimore, Md., and ordered to Washington, D. C., July 1, for examination for appointment as an Assistant Surgeon in the Navy, and then to report to the Surgeon-General of the Navy for further orders.

J. T. MILLER, acting assistant surgeon. Detached from course of instruction at the Naval Medical School, and ordered to the "Rhode Island."

M. DONELSON, acting assistant surgeon. Detached from duty with Naval Recruiting Party No. 3, and ordered to Washington, D. C., July 1, for examination for appointment as an Assistant Surgeon in the Navy, and then to report to the Surgeon-General of the Navy for further orders.

G. P. BRADLEY, medical director, retired. Detached from the Navy Yard, Portsmouth, N. H., and ordered home.

E. Z. DERR, medical director. Detached from the Navy Yard, Boston, and ordered to the Navy Yard, Portsmouth, and to additional duty in command of the Naval Hospital at that place.

J. M. EDGAR, surgeon. Detached from the "Wabash," and ordered to the Navy Yard, Boston, Mass.

K. OHNESORG, passed assistant surgeon. Detached from the Navy Yard, Boston, and ordered to the "Wabash."

J. C. BYRNES, medical inspector. Detached from the Naval Academy and ordered to duty as fleet surgeon, first division, Pacific fleet, on board the "West Virginia," sailing from San Francisco, Cal., about July 25.

J. D. MILLIGAN, pharmacist. Detached from the "Fish Hawk," and when discharged from treatment at the Naval Hospital, Norfolk, ordered home, and granted sick leave for six weeks.

APPOINTMENTS.

DR. JOHN T. BOWEN has been appointed Edward Wigglesworth Professor of Dermatology at the Harvard Medical School.

DR. MAURICE H. RICHARDSON has been appointed Moseley Professor of Surgery at the Harvard Medical School.

DR. CHARLES M. GREEN has been appointed Professor of Obstetrics at the Harvard Medical School.

DR. CLARENCE JOHN BLAKE has been appointed Walter Augustus Lecompte Professor of Otology at the Harvard Medical School.

DR. OTTO K. O. FOLIN has been appointed Associate Professor of Biological Chemistry at the Harvard Medical School.

DR. GEORGE B. MAGRATH has been appointed Instructor in Legal Medicine at the Harvard Medical School.

RESIGNATION.

EZRA RIPLEY THAYER, lecturer on the Relation of the Medical Profession to the Law and the Courts, has resigned from this lectureship at the Harvard Medical School.

RECENT DEATHS.

DR. WILLARD PARKER, of New York, son of the late Willard Parker, the eminent surgeon, died on June 24, from cardiac disease, resulting from rheumatic trouble. He was graduated from Columbia College in 1866, and from the College of Physicians and Surgeons in 1870. He did not care for surgery, and the surgical practice of his father was succeeded to by his brother-in-law, Dr. Daniel M. Stimson, who married Miss Edith Parker.

DR. WILLIAM M. NELSON, a physician well known throughout Central and Northern New York, and for over thirty years a practitioner at Taberg, Oneida County, N. Y., died at his home on June 26. He was sixty-seven years of age, and was graduated from Jefferson Medical College, Philadelphia, in 1869.

DR. ISRAEL HART, of Pennington, Mercer County, N. Y., died on June 23, at the age of seventy-nine years. He was graduated from the medical department of the University of Pennsylvania in 1853, and during the Civil War served as Surgeon of the Thirty-eighth Regiment, New Jersey Volunteers. He had previously practiced at Pennington, and returned there at the close of the war. He is succeeded in practice by a son, Dr. Edgar Hart.

BOOKS AND PAMPHLETS RECEIVED.

Practical Gynecology. A Comprehensive Text-book for Students and Physicians. By E. E. Montgomery, M.D., LL.D. Third revised edition. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

La Question de Régime dans les Stations Hydrominérales Françaises. Par le Dr. Mazeran. Paris. 1907.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D. Third edition, revised and enlarged. Philadelphia and London: W. B. Saunders & Co. 1905.

Saunders' Pocket Medical Formulary. By William M. Powell, M.D. Eighth edition, thoroughly revised and enlarged. Philadelphia and London: W. B. Saunders Co. 1906.

Prevalent Diseases of the Eye. A Reference Handbook, Especially Adapted to the Needs of the General Practitioner and the Medical Student. By Samuel Theobald, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

Obstetrics for Nurses. By Joseph B. De Lee, A.M., M.D. Second edition, thoroughly revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

JOHNS HOPKINS HOSPITAL JUL 1907 Address LIBRARY

THE SEGREGATION OF CONSUMPTIVES.

THE ANNUAL DISCOURSE DELIVERED BEFORE THE MASSACHUSETTS MEDICAL SOCIETY, JUNE 12, 1907.

BY J. F. ALLEYNE ADAMS, M.D., PITTSFIELD, MASS.

Mr. President and Fellows of the Massachusetts Medical Society:

The physician's path, though a good one to follow, is neither smooth nor easy. His life is a warfare, from the diploma to the grave — a warfare demanding the constant use of all his powers, but whose visible rewards are not commensurate with his expenditure of force. He strives not for himself, but for others, and others enjoy the fruits of his victories. But this fact does not deter men from entering our profession. Rather does it tend to draw into it those who wish to lead fruitful lives, and it gives to the medical vocation a satisfaction which is beyond all material returns. The physician is not a soldier of fortune, seeking only gold and glory, but a crusader enlisted in the army of God, and fighting for the rescue of suffering humanity. This is the crowning glory of the doctor's life, and it is this unselfishness which ennobles his profession, and gives him a great and peculiar influence — an influence which is generally recognized by the community and which brings him great opportunities for usefulness.

Thus it comes about that a medical practitioner is, to a greater or less extent, a missionary. He is always finding and doing some work, unpaid or underpaid, for his fellowmen, because his training and his position render such work possible and natural. In freely serving the poor, in their homes or in hospitals, his opportunities for good are not exhausted. In all philanthropic measures he is to be relied upon as a helper, and in those directly pertaining to the public health, he is naturally a leader. He has unequaled facilities for disseminating knowledge, for awakening interest and for guiding benevolence. The evidences of this influence are to be seen on every hand. Have you not all exerted it? and have not your laborious lives been brightened and sweetened by your success?

If the influence of the physician in his individual capacity is so great, how much greater must be that of the profession as a whole! When this acts as a unit great things can be accomplished, and our medical societies render such action possible. This organized force has done good work in the past: it has persistently opposed error with truth, ignorance with knowledge, charlatanry with science; it has given to the world the benefit of those marvelous discoveries of the past century which have prevented untold suffering and rescued millions from death; and it stands ever ready to champion every good cause whose object is to save human lives and make them better worth living.

It is therefore the thing to be expected that we, Fellows of The Massachusetts Medical Society, on this our anniversary, should ask ourselves and each other, "What is the cause which this year most urgently demands our help?" I think you will agree with me that the one paramount problem which to-day confronts us is the suppression of tuberculosis, and that this is the cause which now calls most loudly for our united and hearty support.

The knowledge that it is possible to exterminate this scourge of our race has deeply stirred the minds of men — and flooded the world with the light of a new hope. A mighty war is now in progress — a war which is uniting under a common banner people of every race, color, language, nationality, class, party and creed. Already have notable victories been won, but we are still in the early stages of the campaign, and it will require years of valiant and united onslaught to rob tuberculosis of its terrors. Meantime, the people look to us for leadership; and it is incumbent upon us to consider, year by year, what battalions are to be organized, what engines of war constructed and what tribute levied upon the community for the successful conduct of the campaign.

As a contribution to the discussion of this subject, I will ask you to consider with me that one of its branches which seems to me of the highest importance, namely, the prevention of consumption by the separation of the sick from the well.

Since pulmonary tuberculosis is known to be actively infectious, through a specific germ, it is perfectly evident that the isolation of all infected persons would, in a few years, stamp it out. It is the leprosy of our time; and, as leprosy is kept under control by the segregation of lepers, so may consumption be eradicated by the segregation of consumptives.

Let us suppose all the power in our country to be centered in a despot of unlimited power and wealth, and also filled with a burning desire to confer great blessings upon his subjects. Such an one might say, "Consumption is the greatest enemy of my people. I will destroy it, and that quickly." Could he do it? He could; and how? He would order the formation of many great camps, or enclosures, where all consumptives would be forcibly colonized. These would be placed not far from the cities and towns, but far enough to find pure air and sunshine. There would be tents, cabins or shacks for the incipient cases, and hospitals for the advanced. There would be ample space and much freedom within the camp, but no passing the bounds. Here many early cases and some of the advanced ones would be restored to health and be permitted to return to their homes, while those who must die would have their illness brightened by good care and every possible alleviation. By this removal of consumptives, infection would cease, and since the patients would no longer leave the disease as a legacy to their families, new cases would grow fewer and fewer. The change in ten years would be marvelous, and if our supposed despot should live to the good old age he would deserve, he would see his camps nearly deserted and consumption dwindling to an insignificant place in the mortality tables. At the end of his benefi-

cent reign, his grateful people would erect a monument inscribed with these glorious words, "To the Conqueror of Consumption."

The day of despots has now gone by, but the power which they wielded still remains, vested in the people, and the people are able to accomplish this same result. When once they are educated up to the idea, when they fully understand that the thing can be done and that the doing of it will save multitudes of lives and remove one of the chief causes of suffering, poverty and sorrow, will there not be a great popular uprising, when the people themselves will demand the enforcement of this act of depotism, which will separate the infected from the uninfected, to the end that the plague may be stayed? They will be a little longer about it than our despot would have been, — measures too arbitrary and violent might engender sedition and wreck the treasury, — and they will try to bring about the desired result without too much restraint of personal liberty and without danger of financial disaster, but in good time this thing will be done. It is safe to prophesy that the days of tuberculosis are numbered and that future generations looking back upon our time will say, "There were giants in those days, for they destroyed that arch-enemy, consumption."

Through the untiring efforts of a great number of medical men, and some very earnest laymen, the people are being taught the value of local associations, of medical inspection, of visiting nurses, of anti-spitting regulations, of disinfection of houses, of registration of cases, of out-door life, of dispensaries and of sanatoria for incipient cases. But the most urgent need of all, the hospital for advanced cases, is not yet sufficiently recognized. It is not a philanthropic interest in the patients themselves which is the chief reason for building these hospitals, though this would be reason enough; but there is a far more weighty one,— the prevention of infection, whereby alone the endemic may be arrested. The public need be shown the necessity for such hospitals, and state, city and town governments should be brought to realize that the appropriation of public funds for this purpose is a patriotic duty on grounds not only of humanity, but of self-preservation. The vast expense, however, will be an almost insuperable obstacle to the sufficient carrying out of the plan. But it is a war measure and we must learn to consider it as such. "Millions for defense" are not begrudged against human enemies, and why should they be against the far more hostile and bloodthirsty bacilli? But, for the relief of the overburdened tax-payers, we need also to enlist the interest of private philanthropy. Persons of wealth should be shown that in no way can they use their means to help their brother-men more wisely and efficiently than by building and maintaining these hospitals for consumptives. This needs to become the great popular charity.

The state of Massachusetts, which built at Rutland the first state sanatorium for incipient cases, is wisely undertaking to provide also for advanced cases. A "Commission to investigate measures for the relief of consumptives" was appointed a year ago, and presented its report last March. So admirably was this report prepared, so wise were its suggestions and so convincing were its arguments, that already has the legislature passed bills carrying into effect nearly all of its recommendations. These bills provide, first, for the immediate construction of three infirmaries for tubercular patients, of 150 beds each; second, for the appointment of state inspectors of health; third, for compulsory registration of cases; and fourth, for giving greater effect to the anti-spitting law. Surely this is a remarkable result. A commission which has brought the enactment, in a single session, of so many beneficent laws is entitled to our gratitude and admiration. Three of its six members are Fellows of The Massachusetts Medical Society, and it is fitting that their names should be mentioned and remembered. They are Dr. H. P. Walcott, Chairman of the Commission and Chairman of the State Board of Health, Dr. A. S. MacKnight of Fall River, and Dr. C. S. Millett of Brockton, Secretary of the Commission. Their lay associates are Messrs. Brackett, Adams and Porter.

To this roll of honor should be added the name of Senator Frank M. Chace, of Fall River, who had charge of the "Three Sanatoria" bill; of Ex-Representative Googins, of Cambridge, who for four years, from 1901 to 1904, tried to secure the passage of a similar bill, and of Senator Frank G. Wheatley, M.D., another Fellow of our Society, who had charge of the bill providing for State Inspectors of Health.

There are many others who have been active in securing this beneficent legislation, but I will here add but one other name, that of Governor Curtis Guild, Jr., who, in his last inaugural, recommended measures for the relief of consumptives, and who has done all in his power to advance it.

This commission undertook a census of consumptives in Massachusetts and obtained from physicans reports of 7,779 cases, of which about one third are classed as incipient. But, as the Secretary of the Commission stated to a committee of the legislature, the actual number of cases is probably double these figures, which seems extremely likely, when we consider that there are 5,000 deaths annually. It is quite safe to place the number of consumptives in the state at 15,000, of whom 5,000 or less are incipient, and 10,000 or more advanced. Let us inquire how nearly the three new infirmaries will come to accommodating this number.

We have already in the various institutions of the state about 400 beds for incipient cases and 500 for advanced — making 900 in all. The 450 beds in the three new infirmaries will make 1,350. Each bed will be sufficient for two or perhaps three patients a year. If we say three patients a year, the 1,350 beds will provide for 4,000, leaving 11,000, or nearly three quarters, unprovided for.

The building of these infirmaries, therefore, is not going to be enough to stamp out the disease,

but it is a long step in the right direction; it will afford much relief and will be an object lesson to demonstrate their value and the necessity for increasing their number in the future.

It will not take long to show the value of this separation of advanced cases. When we remove them from their homes and from public places, the number of incipient cases will begin to fall off. Every person with advanced tuberculosis is likely to infect at least one other person, so that under present conditions there is no possibility of the disease dying out.

The long continuance of the disease renders impossible such house quarantine as is enforced in the case of smallpox, scarlet fever, measles and diphtheria. However careful may be the patient and his family, there is always danger that, through some relaxation of the rules, germs may be conveyed to another person. Such accidents may happen through forgetfulness, weariness, excitement, intemperance or delirium. In the last stages of the disease the patient often expectorates at random all over the bed, the floor and even the walls, thus endangering the wife or daughter who is in attendance, other members of the family who pass through the room, and children who may be creeping upon the floor. Such cases ought not to die at home. They should be moved to a hospital, where they can have more comforts, and not be sowing the seeds of disease among those whom they love best. This separation will be resisted at first on sentimental grounds, but the arguments for it are so strong that resistance will lessen with time. Especially will this be the case if these hospitals are not placed at such a distance as to forbid frequent visits from members of the family. These visits, which can be made without danger, will relieve homesickness and make the separation less complete and depressing than it would be if the patient had to be removed far from home.

The sanatoria for incipient cases are doing a great work restoring to health a considerable number of persons who would otherwise die. At Rutland, during the eight years since the sanatorium was opened, the number of cases discharged "arrested or apparently cured" has been 1,487, or over 41% of all cases treated. This is a handsome showing; it justifies the outlay for the sanatorium, and is full of encouragement for the future; but, compared with the number of consumptives in the state, the figures are not large. It has been the policy of the sanatorium to restrict it to incipient cases, and such are never refused, but hitherto there have not been enough such applicants to fill the beds, and rather than to let the beds remain empty, a sufficient number of moderately advanced cases to fill them have been received. At present the number of incipient applications has increased to such an extent that few advanced cases can be received, and the question every day arises, What can these people do? The doors of Rutland are closed against them, and properly so, for these incipient cases have the prior claim; but their need is great, and there is, as yet, no place for them to go.

The number of rejected applicants last year was about a thousand, and if we add to these nearly 400 more who, after a few weeks or months, were found not to respond to the treatment and were discharged, these alone are sufficient to fill the three new hospitals which are now proposed. This proves the urgent necessity for their speedy construction.

In Massachusetts the provision for incipient cases at present consists of the State Sanatorium at Rutland, with 350 beds; and two private sanatoria — that of Dr. Bowditch at Sharon, and that of Dr. Millet at East Bridgewater, each with about 20 beds.

For advanced cases, about 250 beds, or half of all those in the state, are in Boston institutions, namely, the Channing Home, House of the Good Samaritan, the Cullis Consumptives' Home, the Free Home for Consumptives, St. Monica's Home for Colored Women and Children, the Boston Almshouse and Hospital, Carney Hospital.

Outside of Boston, the principal provision is at the Tewksbury State Hospital, which has 140 beds for consumptives, besides a camp of 36 beds. The other institutions, where advanced cases are received, are: the Holy Ghost Hospital for Incurables, Cambridge; Lowell City Hospital, Fall River City Hospital, several private hospitals in Rutland and Miss Sullivan's private hospital, Pittsfield.

A Sanatorium for Consumptive Prisoners is also just completed at Rutland, and the Danvers Insane Asylum has separate cottages.

To this list may be added the Mattapan Day Sanatorium, maintained during the warm months by the Boston Association for the Relief and Control of Tuberculosis, and the Day Sanatorium of the Lowell General Hospital. A certain number of consumptives are also to be found in insane hospitals, almshouses and prisons. The general hospitals, as a rule, receive such only in exceptional cases.

Boston is soon to have a large addition to its facilities in the Consumptives' Hospital now about to be built at Mattapan. In establishing this hospital this city has set an example which every other city will do wisely to follow.

Besides what is being accomplished by the sanatoria and hospitals, much good work is being done by dispensaries and clinics. Among these are to be specially mentioned the tuberculosis clinic of the Boston Dispensary, conducted by Dr. Otis; the Out-Patient Departments of the Massachusetts General Hospital, Boston City Hospital and Carney Hospital, the Berkeley Infirmary and Trinity Dispensary. The tuberculosis classes have also proved extremely useful, and are well worth study and imitation. These are "for the home treatment by sanatorium methods of incipient and moderately advanced cases." Such are the Emmanuel Church Tuberculosis Class, conduced by Dr. Joseph H. Pratt; Arlington Street Church Tuberculosis Class, by Dr. N. K. Wood; Suburban Tuberculosis Classes, by Dr. John

B. Hawes, and the Cambridge Tuberculosis Classes.

The Boston Association for the Relief and Control of Tuberculosis, and similar organizations in Cambridge, Worcester, Springfield and Brockton, have also become important factors in this great and many-sided enterprise.

By these various means tuberculous patients are treated in their homes, are instructed in the methods of cure and prevention, receive the care of physicians and visiting nurses, some receive aid, and some are enabled to go on with their usual occupations.

All of this work is of great and far-reaching importance, but would be made infinitely easier and more effective if the hospital accommodations were sufficient for those cases in which the home conditions are unfavorable. That these conditions are unfavorable in a large proportion of cases we all know, and we also know how utterly inadequate are our 500 beds to the needs of the 10,000 advanced cases in the state.

In other states the lack of provision for advanced cases is as great as in our own, and in most cases greater. For incipient cases provision is becoming abundant. The sanatorium method, which was orginated by Brehmer in Germany in 1859, and which was first put into operation in this country by Trudeau at Saranac Lake in 1885, has been attended with such wonderful results that these institutions have rapidly multiplied. They are now to be found in nearly all of the northern states, New York standing at the head of the list, and the majority being private institutions. But the example of Massachusetts in building a state sanatorium has been followed, and there are now fourteen state sanatoria, completed or building, besides three others which receive state appropriations. The United States government has established sanatoria : at Fort Bayard, N. M., for the army; at Fort Stanton, N. M., for the Public Health and Marine-Hospital Service, and at Fort Lyon, Col., for the navy. These old military posts, no longer needed for fighting the Indians, are now attaining a higher usefulness in the war against consumption.

These various sanatoria, whether private, state or national, are almost wholly devoted to incipient cases. For advanced cases the provision thus far is mostly limited to large cities, and is made by the municipalities or by charitable and religious societies. Provision is also made in some states for the care of tuberculous insane and prisoners. The segregation of consumptives in the United States, however, is still in its infancy, and is very far from attaining that general and systematic character which alone can have any radical effect in suppressing the disease.

In Europe the conditions are much the same as here. The tuberculosis campaign on that side of the ocean is being pressed with extraordinary vigor. But it is the sanatoria for incipient cases which, at present, are receiving the most attention. Germany, the fatherland of Brehmer and Koch, leads the world in this respect, having over 100 sanatoria with 10,000 beds. Dr. Locke's recent article in the BOSTON MEDICAL AND SURGICAL JOURNAL gives a most interesting account of the "Crusade against Tuberculosis in Germany," and explains the part taken in it by the Workingmen's Insurance, the German Red Cross and the German Central Committee for the establishment of sanatoria for diseases of the lungs. But of all this great number of sanatoria, there are very few for advanced cases. The latest report I can find describes only 8, mostly small, but including one large one at Grosshansdorf, with 200 beds, built by the Workingmen's Insurance fund. In several German cities separate wards for advanced consumptives are provided in general hospitals, and much is also being done for this class through dispensaries and polyclinics, but the need of increased provision for these cases is deeply felt. As von Leube says, almost all of the existing German sanatoria are open only to a small minority of the cases, namely, the early incipient, whom he estimates at about 30,000; while for the advanced cases, of whom there are supposed to be 1,000,000, very scanty accommodations are provided.

In England, and elsewhere in Europe, the situation is much the same as in Germany. The care of early cases by sanatorium treatment is now chiefly engrossing the attention of the civilized world, while the advanced cases, far greater in number, and far more likely to spread the infection, remain in their homes, where they are receiving, it is true, an increasing amount of care through dispensaries and visiting nurses. This sort of care, however, cannot prevent the transmission of the disease to their families. The danger may be lessened, but in the home it is, in the great majority of cases, practically impossible to avert it.

The next step in the campaign will be to undertake the prevention of consumption by separating the sick from the well. For this, two things are chiefly necessary: first, to provide ample hospital accommodation for advanced cases; and second, to establish some systematic supervision over those who, for any reason, cannot be removed from their homes.

Fortunately, in Massachusetts, both of these wants are in a fair way to be supplied through the new laws but just enacted, one providing for three new sanatoria, and one for state inspectors of health. The commission recommended that these sanatoria should be inexpensively constructed, at a cost of about $500 a bed; and the appropriation is based upon this modest estimate, which is much less than the usual outlay for such institutions, most of them, including that at Rutland, having cost something more than $1,000 a bed. One of the newest in England, the King Edward VII Sanatorium at Midhurst, cost $1,000,000 for 100 beds, or $10,000 a bed, and is no doubt the most expensive of its kind. Since the construction of such sanatoria on a large scale now seems inevitable, a minimum of cost is a highly important desideratum, and if it can be demonstrated that a sanatorium embodying all the essentials, and not of too inflam-

mable materials, can be built for $500 a bed, the segregation problem will be materially simplified.

As we have seen, these three new sanatoria are likely to be filled up promptly with the overflowings of Rutland, — that is, with moderately advanced cases; but the great majority of consumptives will still be left, many of them unfit to be moved beyond the limits of their own town or city. For these, local hospitals are an urgent necessity, and no question can be more important than how to convince the public of their necessity and how to bring about their construction. The plan of construction is of minor importance. There will have to be an administration building, sufficient for future as well as present needs, about which may be grouped cheaply-constructed wards, cottages or shacks, which can be increased in number as needed. These should, if possible, stand in a plot of ground several acres in extent, and, while pure air and sunshine are essentials, the location should be near enough to a center of population to insure water-supply, drainage and fire protection as well as to permit frequent communication between the patients and their homes. In small towns a farmhouse may be utilized, while in larger towns and cities special buildings will be constructed or special wards added to existing hospitals, as at Fall River and Lowell.

As regards the size of these hospitals, a good rule might be to provide one bed for each thousand of the population, with the expectation of increasing in the future. At this rate it is evident that, in the smaller towns, only cottage hospitals would be required. A city of 100,000 population would have a hospital of 100 beds, costing, at $500 a bed, $50,000, and the annual cost of maintenance would be about the same as the cost of construction, or $50,000 a year. In cities and manufacturing towns, which have the largest ratio of consumptives, the hospitals will need to be larger in proportion to the population than in the rural towns.

It is to be confidently expected that philanthropic citizens, when they become convinced of the importance of this measure, will help to lighten the strain upon the public purse by donating land and buildings and contributing to a fund for their maintenance.

If all of these institutions are called sanatoria, it may be easier to induce patients to go to them than if they are called hospitals, though the word "hospital" has a far more cheerful sound in these days than it had a few decades ago.

What, then, can we, members of The Massachusetts Medical Society, do the coming year to help on the campaign against tuberculosis?

We have been considering two propositions: first, that we are a united body of missionaries who esteem it a duty and a privilege to aid any good cause whose object is to rescue the human race from the tyranny of disease; and, second, that we have arrived at an important crisis in the world's history, when a great discovery has shown us the possibility of annihilating tuberculosis. The truth of both of these propositions is so obvious that the only possible conclusion is that we must all, individually and collectively, launch ourselves into this campaign and determine that each year shall become memorable through the achievement of some notable victory.

Encouraged and stimulated by the brilliant successes of the past year, we can now look forward with new confidence and see more clearly where our duty lies.

The *prevention* of tuberculosis rises at the present time into special prominence, and it has been my endeavor to show that the ideal way to accomplish this is through the segregation of the sick. The new state sanatoria will greatly facilitate this separation, and it will be incumbent upon us to induce our patients to go to them, and to convince them that this is best for themselves and necessary for the protection of their families.

We can also agitate for the erection of additional local hospitals for advanced cases, and do what we can to interest people of wealth and liberality in this method of helping their neighbors. If this sort of missionary work is done only by a few of us, the results will be insignificant; but if we all take hold and do it together, enthusiastically and aggressively, a general and widespread interest will be awakened and we will have something to show for it a year hence.

But let me not be understood as urging activity in this one direction to the neglect of others. The problem is a complex one, and the campaign in many other directions is well under way. It is necessary to continue the attack with increased activity along the whole line. Here are some of the ways in which we can render efficient help:

We need to show our approval of the recent acts of the legislature by doing all we can to make them effective. To this end we must carefully comply with the law requiring notification of cases of tuberculosis to the board of health.

We can, whenever occasion offers, explain the importance of the anti-spitting law.

We can cordially co-operate with the state inspectors of health, who are to be appointed, and give them our support in the work they are to undertake, which is expected to result in a systematic organization of the war against consumption.

Moreover, we can lend our aid to the associations for the relief and control of tuberculosis; we can urge the appointment of visiting nurses, the establishment of day camps and dispensaries; we can take pains to see that the disinfection of houses after the removal or death of consumptives is thoroughly performed, and we can bring to the notice of manufacturers the admirable work which is being done in the factories of Providence, of Oxford and of Brockton.

Again, we can accomplish something in our district societies, by means of the committees on tuberculosis, which were appointed year before last, through the active initiative of Dr. A. T. Cabot, then president of the State Society, and now president of the State Committee on Tuberculosis. One way in which the work of these committees can be facilitated is by providing

them with funds for carrying on a campaign of education.

Having done all these things in the capacity of medical missionaries, there is one other thing which, as medical practitioners, we must not leave undone. We must seek out the incipient cases and send them to Rutland or some other sanatorium while they are yet in the curable stage. We can do this by being always on the watch for danger-signals, by making a careful physical examination in all cases of suspicious cough, of emaciation, of slight rise of temperature, of unexplained debility; by making early examinations of sputum; by not delaying to tell our patients of their condition and by carefully explaining to them how much better are the results of sanatorium treatment in an early than in a later stage. We must preach the gospel of outdoor life, and must insist that any of our patients who cannot go to a sanatorium shall have the open-air treatment at home.

And even this is not all. We need to keep constantly before the minds of the people that consumption can also be combated by improving the stock, by bettering the conditions of the working-people, by seeing that they are not deprived of light and air in their homes and the places where they work, and by preventing poverty, vice and intemperance. If those influences can be overcome which tend to sap the vitality of the race, infection will be less frequent, even though exposure continues.

Thus the problem of tuberculosis is found to involve the whole science of social economics, and to demand for its solution the combined efforts of all those who are striving in any way to improve the conditions of the human race. This is a holy war, and in it let us, Fellows of The Massachusetts Medical Society, do our full share of the fighting. Let us inscribe on our banners "Consumption not only can be cured, but it can be and shall be *prevented*."

Original Articles.

ACIDOSIS.*

BY ELLIOTT P. JOSLIN, M.D.,
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THIRTY years ago this spring in Strasburg, Walter [1] published an account of a series of experiments on acid intoxication, which were more conclusive than those of previous writers. He discovered a marked degree of uniformity in the symptoms after the administration of hydrochloric acid to rabbits. If the quantity of acid inserted into the rabbit's stomach exceeded 0.9 gm. per kilogram in one day, death could be predicted within a few hours. The phenomena were ushered in by increased frequency of respiration. Each respiratory movement was deeper, more labored and accompanied with forcible heaving of the body walls. The animal lost the power of moving freely about and remained quiet in the position assumed. Having reached this stage one quarter of an hour intervened until death. The dyspneic character of the respiration now diminished, the blood pressure, which had been raised, fell and the heart's action grew scarcely perceptible, yet respiration invariably ended before the heart ceased to beat.

The administration of acid to dogs failed to produce similar symptoms, although double the quantity of acid was fed. Walter was so fortunate as to detect the reason for this immunity and to show that it lay in the capacity of the dogs to protect themselves by the formation of ammonia and the neutralization and excretion of 75% of the acid administered as an ammonium salt. This difference between the action of acid in dogs and rabbits has been shown by Winterberg [2] and others to be only relative, since rabbits can also protect themselves to a limited degree by the formation of ammonia, and on a proteid diet are less susceptible to acid poisoning,[3] while, on the other hand, dogs succumb with similar symptoms if the acid is injected into the veins. There is, in fact, general agreement from Walter's [4] time until now that symptoms of excitement with dyspnea, coma and death follow the intravenous injection of acid in rabbits, dogs and sheep.[5]

Much evidence has accumulated to prove that the cause of death is acidosis. The intravenous injection of an alkali simultaneously with even double or treble the ordinary lethal dose of acid prevents the occurrence of symptoms, and the introduction of an alkali, when death is imminent from acid poisoning, brings recovery.[6] It is, therefore, improbable that structural changes in the tissues have taken place, and indeed none such have been found.

The symptoms above recounted are not specific for any one acid, — hydrochloric, phosphoric, acid sodium phosphate and lactic acid.[7] They are distinct from symptoms attributable to poisoning with salts. They may resemble those of sodium nitrite and other drugs,[8] but the presence of such drugs in experimental acid poisoning has not been demonstrated.

The formation of ammonia is the response of an aminal to the injection of an acid. So far as I know, all agree that ammonia is a measure of acid metabolism, whether the acid is introduced into the body or formed within it.

Hallervorden [9] was able to show that the production of ammonia grew less when alkalies were injected. Ammonia is a "factor of safety" in our metabolism, and it is interesting to note that its neutralizing power is five times that of the common extraneous alkali — sodium bicarbonate.

Confirmation of acid poisoning is further found in the diminished power of the blood of these animals to neutralize acids. This can be estimated by the amount of carbonic acid present, because carbonic acid is displaced from its loose combination by any of the acids considered. Walter [10] showed in his fatal cases of acid poisoning in rabbits that the carbonic acid was lowered 90%,

* Read before the Association of American Physicians, Washington, D. C., May 9, 1907.

and Spiro [11] obtained fully as much reduction in dogs when he injected acid sodium phosphate intravenously. The direct titration of the blood after acid poisoning was undertaken by Spiro, who recorded a fall in alkalinity, from 169 mgm. NaOH to 73 mgm. NaOH per 100 cc. in dogs and a fall of 85 mgm. NaOH per 100 cc. in rabbits. Szili,[12] one of the latest investigators, obtained similar results. He also obtained a fall of 95% in the hydroxylion concentration of rabbits and dogs. The language of physical chemistry, however, often leads to confusion, because this apparently great change in concentration represents in 1,000 gm. of blood merely a fall in alkalinity from 51 ten millionths to 1.7 ten millionths grams. Unfortunately, the methods employed for the determination of the alkalinity of the blood are far from satisfactory and new developments may be awaited from the methods of Rzentkowski.[13] He has recently shown that the chief part of the blood's basicity is concerned with the albuminous portion of the red blood corpuscles. One gram of albumin of the red blood corpuscles corresponds to 4 gm. of albumin of the plasma in acid combining power.

Does man show an analogous condition to the acid intoxication of animals? Unconsciousness for a longer or shorter interval usually precedes death, even apart from those diseases in which there are obvious structural changes in the brain. A longer period of unconsciousness, coma, has long been known, but Kussmaul [14] called attention in 1874 to a distinct type of coma met with in diabetes. This was characterized by dyspnea — air-hunger — which preceded actual coma. The thorax expanded excellently in all directions, complete inspiration was followed by complete expiration. Congestion of the veins in the neck as well as cyanosis were absent. The contrast between the universal weakness and the strength of the respiratory movements was one of the most striking peculiarities of the picture. The pulse was often of extremely high tension at the onset of coma, but gradually wore out as it advanced. The impression left upon the observer invariably suggested some form of poisoning. Air-hunger, in the absence of cyanosis and of local and general convulsions served as a distinguishing feature.

Coma in diabetes is by no means an exceptional occurrence. The frequency with which it is met was recorded by Marsh,[15] in 1854 and that same year v. Dusch [16] differentiated it from uremic coma. Among 732 fatal cases of diabetes observed by various writers, death occurred as a result of coma in 53%. The type of coma in diabetes, which is most distinctive, occurs in what Naunyn [17] calls "pure diabetes," that form of the disease which runs its course free from complications in life and gross pathological changes after death. This occurs most frequently in the young. Any study of coma in diabetes loses its significance, unless this peculiar group is considered alone. Arterial changes are so universal in diabetes that coma of a cerebral or renal type is of most frequent occurrence. Such forms of coma have no connection with that under discussion, even though the urine may show a moderate acidosis.

Any comparison between Walter's coma of acid intoxication in animals with the dyspneic type of coma in man must not be carried too far. The cause in animals is of sudden onset, and occurs during health, but in man it is of gradual onset, increases in intensity and takes place in an individual debilitated with a long-standing disease. The main symptoms of restlessness, dyspnea and coma are common to each, and I am inclined to believe that the premonitory rise of blood pressure in rabbits will be found to have its counterpart in man.

Hallervorden's observations upon the excessive amount of ammonia in the urines of diabetics suggested to Stadelmann [18] that dyspneic coma presented an etiological as well as a clinical analogy to the coma of acid intoxication. Men, as well as dogs, increase the ammonia output after the administration of an acid, and in men, just as in dogs, the total amount of ammonia falls when alkalies are given. Until proof is afforded to the contrary, we are forced to explain an increased excretion of ammonia by the presence of acids somewhere in the body demanding neutralization. The experiments of Schittenhelm [19] would indicate that a relative increase of ammonia also had the same significance.

The excretion of ammonia in severe diabetics may increase from the normal quantity of about 1 gm. up to even 12 gm., and the cases are numerous in which 5 gm. are formed daily. The relative per cent of nitrogen in the form of ammonia to the total nitrogen rises much higher than was formerly supposed, not uncommonly reaching 25%, and in one of my recent cases was 41.2%, which is greater than in any case I have found reported. The patient is still vigorous. The total quantity of ammonia falls after the administration of alkalies, but as in animals, this goes on gradually. In rare instances the urine may be alkaline [20] and yet the ammonia may remain both actually and by per cent high. An alkaline urine, however, is no proof that the requirements of the body for alkalies are satisfied, but rather that the body is unable to utilize extraneous alkali in those tissues where the acid is formed. The total ammonia naturally falls in coma, if there is a diminished flow of urine. I have observed the ammonia fall from 38.8% a few weeks before coma to about 20% during coma, and Herter [21] has made similar observations. It is not strange that this does not take place in the death agony, and shows, as Müller suggested, that the ammonia represents the animal's power of compensation.

It is easy to measure how much acid is required to produce coma in a dog, but not so simple to determine from the blood and urine of man the quantity which has caused the same symptoms. Stadelmann attempted this task and found by estimating the acids and bases that although the urine was acid, bases were in excess, thus indicating the presence of an organic acid. He recognized the importance of this discovery and introduced the alkaline treatment of dyspneic

coma. Kulz [22] and Minkowski [23] independently discovered that the unknown acid was B-oxybutyric acid, although other organic acids, apart from di-acetic acid and its derivative acetone, were present in negligible quantities, just as they are in the urines of healthy people. The difficulty of estimating B-oxybutyric acid quantitatively and the ease with which its alleged derivatives, acetone and di-acetic acid, can be determined, diverted attention from B-oxybutyric acid as the chief cause of acidosis. Folin's [24] recently published method for the quantitative determination of acetone distinct from di-acetic acid only emphasizes this point. He shows that acetone can seldom constitute over 10% of the total acidosis. Acetone and di-acetic acid do not even vary relatively with the sum of the total acids.

The actual and accurate demonstration of B-oxybutyric acid as the chief alkali robber in dyspneic coma was made by Magnus Levy [25] in 1899. He was able to obtain by direct extraction from the urine of a child in dyspneic coma 4.5 gm. B-oxybutyric acid per kilo body weight, and from a similar though older child, during the day of temporary relief following coma, I obtained 3.5 gm. per kilo, or 180 gm. calculated as B-oxybutric acid from the excess of bases in the urine. Fully taking into account the difference in molecular weight of hydrochloric and B-oxybutyric acids, these quantities exceed the amount necessary to produce artificial coma in animals. Such large quantities of acid are only obtained from the urine during the day following coma. It is not the quantity of acid excreted, however, that does the harm, but rather that which is retained in the tissues. This may reach approximately 100 gm. during coma, according to Magnus Levy, and calculation shows that the lowering of the alkalinity of the blood corresponds with such quantities of acid. On the other hand, the body is provided with only sufficient alkali to neutralize some 80 gm. of B-oxybutyric acid apart from its capability of forming ammonia.

It is interesting to note that those clinical disturbances, indigestion, febrile affections, overexertion, which are apt to be followed in diabetes by coma, are all accompanied by acidosis.

Dyspneic coma is frequently encountered with smaller quantities of acid than those mentioned, and there are good reasons therefor. Acids are not excreted except as salts. Spiro showed this experimentally in rabbits and demonstrated a parallelism between the urine curve and the diminished alkalinity of the blood. When coma appeared the excretion of urine ceased, to recommence when soda was injected. It is only fair to state that in dogs an exact counterpart does not exist. It is a fact of clinical observation that such large quantities of B-oxybutyric acid as above mentioned are never obtained in long standing cases of diabetes, unless alkalies are given. Similarly large quantities of B-oxybutyric acid will not be excreted unless the quantity of urine is sufficiently great to hold it in solution. The per cent of B-oxybutyric acid in the urine did not rise above 1.5, even in my exceptional case, where the total excretion of acid reached 180 gm. in 24 hours. Outside of coma, Magnus Levy has never found it to exceed 0.6%. Larger quantities have often been reported in the literature, but they were not estimated by Magnus Levy's accurate methods. Since an abundance of alkalies and an abundance of urine are required for the elimination of large amounts of acid, it is not strange that debilitated diabetic patients excrete comparatively little acid in coma. It is equally obvious why injections of neutral salt solution and heart stimulants occasionally rescue a patient.

The dyspneic coma of diabetes cannot be cured by the injection of alkalies alone. The body must be in sufficiently good condition to rid itself of the acid, and even this is not all. Permanent recovery cannot take place without a continuous supply of alkali to meet the continuous formation of acid. The alkalies further must be offered the body in such a form that they can be utilized, not in the blood alone but in these tissues where the acid is produced. Temporary recovery from dyspneic coma is a most common incident. Because it is so common, but withal so temporary, many of us have felt it cruel to the patient to bring it about, and I have not forgotten the statement of the boy, whom I twice brought out of coma by injection of alkalies into the veins of both arms, that he was glad he had no other arm. The return to consciousness after the injection of an alkali is as striking a demonstration in man as the relief which follows a similar injection in an acid poisoned animal.

The reaction of the blood in diabetes confirms the view of an acid poisoning. Minkowski [26] found a diminution of the carbonic acid content of the blood of 40% in a non-comatose diabetic and of 90% three weeks later, when the same patient was in coma. Krauss,[27] Tambrey and Spriggs [28] record similar instances. Direct titration of the blood showed a lowering of the alkalinity in the hands of Krauss, Magnus Levy and Benedict.[29] It is to be regretted that Rzentkowski had no diabetic patient at his disposal. The experiments of Szili (*loc. cit.*) on the determination of the hydroxyl and acid ions of the blood showed a marked diminution of the alkalinity in the acid intoxication of animals, but Benedict (*loc. cit.*) failed to observe a similar change in diabetic patients. It is certainly open to grave question whether one could expect by his method in long standing cases of acidosis a result similar to an acidosis of animals running its complete course in an hour.

It is just half a century ago that Petters [30] held that acetone had causal connection with coma, but the experiments of Albertoni, Pissenti and Kussmaul so effectually disproved this possibility that the question was not again opened until in 1905 Grünberger [31] discovered its presence in the cerebrospinal fluid of a diabetic patient in coma. Until further experiments and clinical observations upon this point are carried out, it is improper to entirely disregard it, but it seems improbable that the presence of acetone in the

cerebrospinal fluid of diabetics is of especial significance. A specific action has also been ascribed to B-oxybutyric acid, quite apart from the influence it exerts as an acid. So far experiments have not been published which support this view, though Von Noorden [32] refers to such by Herter, in the fourth edition of his book. Von Noorden ascribes a certain part of the specific diabetic intoxication to the specific poisonous effect of B-oxybutyric acid, and he even considers the neutral salt of B-oxybutyric acid poisonous. I cannot reconcile this with his other statement that he knows many diabetic patients who have excreted 50 to 60 gm. acetone bodies daily for six years, nor do I find it consistent with the opinion expressed later on in the same volume, pp. 327 and 328, that he has had better results in the treatment of coma, presumably its preventive treatment, since he has used, at the recommendation of Naunyn and his school, very large doses of alkalies in place of the smaller doses which he previously employed, or, again, where he states that following the preference of Naunyn he has turned from salt and levulose infusions to an infusion of an alkali. Herter's observations and his opinion as communicated to this Association in 1900 also are strong evidence against any specific action.

The overwhelming amount of B-oxybutyric acid excreted by diabetics without discomfort makes it appear trivial to attempt the explanation of grave symptoms in many diseases by the coincident presence of a few grams of acid, or decigrams of acetone. Most of the observations on acidosis, other than in diabetes, have been based on qualitative tests alone, and even when these tests have been of a qualitative nature, they have almost without exception disregarded entirely the chief acid, B-oxybutyric acid. No instance has come to my observation of an excretion of more than 10 gm. of total acid in 24 hours. If the physiological chemists would only give us a short, accurate method for the determination of B-oxybutyric acid, we should hear much less of the harmful effects of acetonuria.

The treatment of acidosis in diabetes is too often symptomatic, despite Herter's warning given here in 1900. Etiological treatment is generally forgotten. As repeatedly emphasized by Naunyn, acidosis varies inversely with the capacity of the individual to utilize carbohydrates. A gain in the power of oxidizing a few grams of sugar avails far more than alkalies in overcoming acid intoxication. It is because the treatment of diabetes has been directed of late years toward improving this tolerance that the treatment of acidosis has also improved. Aside from general measures leading to this end, search has been directed for some form of carbohydrate which would be capable of oxidation in the diabetic body, and thus would promote the secondary oxidation of B-oxybutyric acid. For this reason lactose and levulose were tried, and recently Poulssen [33] has suggested the employment of the alga. The most hopeful outlook, however, is presented by Baumgarten's [34] discovery that the radicals into which the carbohydrate molecule is first split are capable of oxidation in the body. It is not unlikely that one of these radicals — gluconic, sucric, mucic, glycuronic and other acids — may eventually be available for the secondary oxidation of B-oxybutyric acid. Schwarz [35] indeed obtained favorable results with gluconic acid some years ago, but its expense so far has prevented its general use. Empirically such a body has been sought by Von Noorden in oatmeal.

The work of Eppinger [36] and Langstein [37] suggests that the use of amino acids may be better symptomatically than the employment of the simple alkalies. Eppinger (*loc. cit.*) prevented the appearance of coma in rabbits after the injection of acids by the simultaneous injection of the amino acids, and its protection apparently was not wholly due to the ammonia therein contained. On the other hand, the work of Embden,[38] Baer and Blum [39] warns us to proceed slowly with the employment of the lower fatty acids. The researches of Satta [40] and Borchardt [41] upon the acid-forming and acid-destroying components of fat and albumin must be further developed.

It is held up as a reproach against the alkaline treatment by Von Noorden that coma is not less frequent than before the days of alkaline therapy. It must be borne in mind that the possibility of death in diabetes from other causes, such as tuberculosis and sepsis, has greatly decreased during the last fifteen years. I think few will question the opinion that the duration of life of diabetics is greater than twenty-five years ago; as a result the disease uncomplicated reaches a greater degree of intensity before it claims its victim. Of this intensity acidosis is the expression.

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SOME REMARKS ON NEPHROLITHIASIS.*

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WITHOUT question stone is one of the most important surgical diseases of the kidney. The subject is so vast and the literature so voluminous that it is obviously impossible to more than mention many of the important features of the condition and to speak but briefly of some of the others. Of the etiology and physical properties of calculi I shall say little, since the discussion would carry us deeply into the problems of chemistry and metabolic changes, but I will endeavor to spend most of our time upon the symptoms and diagnosis of the condition.

There is a very short distance between the formation of gravel and the formation of stone in the kidney. When the soluble substances in the urine become precipitated and are washed out by the urinary stream, we have the condition of gravel. When, by means of mucus or some other organic material this precipitate becomes agglutinated, we have a small calculus, or at least, the nucleus for one, which grows as fresh crystalline deposits are made upon it. This calculus either passes down the ureter with more or less colic to become a bladder stone or be passed per urethra. Otherwise, it remains in the kidney, pelvis, calyces or substance, to grow and give rise to a variety of symptoms of a greater or less severity, but always sooner or later leading to destructive changes in the kidney tissue.

Morris divides calculi into primary and secondary. The former are met with when there is no infection present. Those formed from an acid urine being one or more of the following: uric acid, urates, calcic oxalate, cystine, xanthin and, rarely, indigo, those formed in an alkaline urine being of calcium carbonate and acid or basic phosphate of calcium.

Secondary calculi occur when there is change of reaction due to bacterial infection as in ammoniacal fermentation. They consist of the phosphates of ammonia and of magnesia.

In many cases a primary calculus becomes the nucleus for a secondary deposit because of the septic infection resulting from the irritation of the primary calculus. In point of size and number, calculi vary within a wide range, from very small stones which can readily pass through the ureter to those of enormous size, and in number from one to one or two hundred. In the calyces they may be slightly movable, in the pelvis they are, if of moderate size, much more freely so, and may fall into the ureter, blocking it. In either case they may take the shape of these cavities, sometimes filling them entirely and becoming firmly adherent which was the condition found in the present specimen. Those in the kidney substance are very prone to give rise to abscess formation with perinephritic rupture. According to Legueu and Albaran, bilateral stone occurs in nearly 50 % of the cases. Calculi may be met with at any age, but most commonly between twenty and forty. According to Morris the male sex is most often affected. Heredity seems to play a distinct part, particularly in the case of uric acid stones.

Briefly, the pathology of renal calculus may be divided into the aseptic and the septic changes due to their presence, which is the classification of the best authorities.

The aseptic changes.— There is, first of all, an irritation due to the passage through the kidney of a large amount of uric acid or calcic oxalate, etc., —in the precalculus stage; this irritation often becomes a catarrhal pyelonephritis which is soon followed by interstitial changes as well. The further change in the kidney may be brought about in two ways. There may be an atrophy of the kidney due to this calculus nephritis, or there may be destruction of the secretory tissue as a result of pressure from hydronephrosis, this latter occurring when the stone is of long duration and of sufficient size to entirely or partially occlude the ureter. There may also be an hypertrophy and induration of the perirenal fat, in some cases the kidney being replaced by fat tissue.

These aseptic lesions just mentioned, the nephritis, the retention of urine in the pelvis and the trauma of the stone, readily pave the way for septic infection which takes place through the blood or lymph stream or ascends the ureter from below. The colon bacilli is often the offending organism, the resulting lesion being pyelonephritis, pyonephrosis, nephritic and perinephritic abscess which may result through rupture in loin, groin, intestinal or thoracic fistulæ. Perinephritis often results in firm adhesions between the kidney and the surrounding tissue, making operation difficult. When pyonephrosisis is present the kidney is generally of good size and may consist of a number of different cavities, more or less shut off from one another, containing pus, purulent urine and calculi. When there is more or less destruction of the kidney on one side the process is a slow one and the other kidney generally becomes hypertrophied; it may, however, become the seat of a nephritis and the subsequent changes with resulting stone, like its fellow. Another remote result may be the sudden blocking of the ureter by stone; this may occur in both kidneys simultaneously or, as is most usual, in each successively. This is a grave condition and if not relieved will lead to ulceration and perforation of the ureter with the resulting infiltration and abscess and sinus formation, or death from calculus anuria.

The typical picture of renal colic, as formally described, with its pain, passage of stone, etc., is well known to all and needs no comment. It is also well known, however, that the typical picture is often absent and that renal stones present a great variety of symptoms, simulating other conditions.

Before going into the method of diagnosis, it might be well to consider the various clinical courses taken by renal stone.

1. They may present the typical renal and ureteral colic and be easily diagnosed, but in some cases renal colic closely simulates appendicitis,

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gallstones and other acute intra-abdominal conditions, and must be differentiated from them.

2. They may remain innocuous and unsuspected for years, giving no symptoms or slight ones which have been misinterpreted or long forgotten. The case I shall speak of is a marked example of this. These cases are, of course, always liable to sudden activity; although in a number of cases, stones have been found post-mortem that were unsuspected during life.

3. In some cases the symptoms may be referred entirely to other organs, as the bladder, the testicle, the uterus and ovary, —nothing being felt in the kidney itself. Frequent and painful micturition has often led to the diagnosis of cystitis and local treatment of the bladder with, of course, no relief. This is also true of other kidney lesions, as tuberculosis and neoplasm, both of which may, however, be complicated by stone. One should always have in mind the kidney as a causative factor of frequent micturition. Symptoms may also be erroneously ascribed to malposition of the uterus and diseases of the ovary. The cystoscope and x-ray have done much to clear up such cases.

The majority of cases, however, exhibit at some time certain typical symptoms, and careful attention to the history and painstaking examination of the patient will lead to a correct diagnosis. Among them are more or less frequent attacks of colic, due to the transient impinging of the stone in the pelvic end of the ureter with the pain in the loin or radiating to the testicle. Pain either in the kidney or referred to some other place is a frequent accompaniment of stone. It may be of all degrees of severity from an ache or feeling of lameness to pain of severe cutting or lancinating type. The referred or reflex pains have in part been mentioned and are described as the reno-renal reflex, pain in the other kidney, the reno-vesical, reno-testicular, etc. The pain is sometimes referred to the upper part of the thighs, the inside of the leg and the sole of the foot. The pain being largely mechanical and due to the actual bruising of the kidney by the stone is generally brought on or made worse by exercise or exertion and is relieved by rest.

Bleeding in stone generally takes place at some time or other in all cases. It is variable in quantity and as in the case of pain is generally increased by exercise and diminished by rest. This helps distinguish it from the bleeding of neoplasm. It is very apt to be associated with an attack of pain, the urine being dark or smoky for a few days following. The hemorrhage is rarely profuse, often microscopic. The bleeding of stone should be differentiated from the numerous other causes of hematuria.

Pus is present in the urine in many cases of calculus. Like the blood, it is due to the irritation of the stone; like it, also, it varies in amount according to the amount of inflammatory or destructive change there may be in the kidney. This may be all the way from a few microscopic leucocytes to the large amounts seen in pyonephrosis. A small or moderate amount of pus is rarely noted by the patient as the urine does not become offensive until pyonephrosis with decomposition is present, when the urine becomes very foul. He generally seeks advice because of the pain, colic or bleeding.

The diagnosis of renal stone not so many years ago was a matter of considerable difficulty and uncertainty, — most of the operations being for the drainage or removal of badly diseased kidneys. At present we are much better equipped and the diagnosis should be made early in most all cases.

The methods to be employed are as follows:

First, a careful family and personal history, particularly as regards pain or disturbances of micturition.

Second, palpation of the abdomen. There is often tenderness and muscular spasm over the affected kidney. Tumor is present in hydro- or pyo-nephrosis of any extent. Palpation will also help to eliminate any other intra-abdominal process.

Third, careful routine chemical examination of the urine and examination of the centrifuged sediment for epithelia cells, casts, blood, crystals, tubercle bacilli and the ova of parasites.

Fourth, cystoscopic examination. This is a most important proceeding in the diagnosis, particularly when there is doubt as to which side is affected; and in those cases before referred to with marked bladder symptoms, cystitis, bladder stone, or tumor may thus be eliminated. If the case is bleeding sufficiently at the time, the diseased side may be determined, also the presence of another active kidney. Much valuable information may be obtained from observation of the ureteric orifices, the presence of edema or inflammatory changes about one or the other of them or alteration in their size or shape denoting an existing or pre-existing inflammatory condition of the kidney. Pus in small amounts coming from the ureter is difficult to be sure of and the ureter catheter had better be employed. When present in any amount, however, as in pyonephrosis, it is readily recognized. Ureter catheterization, or segregation, the former much the more accurate, should be employed to ascertain the condition of the other kidney and obtain the separate urine for examination. A slightly bleeding kidney may thus be recognized. The ureters may also be explored for patency. With the wax tip bougie and the phonophore I have had no experience; good results, however, are reported in the use of both by those familiar with them.

Fifth, radiography. In spite of the fact that many unfortunate and embarrassing mistakes have been made in the past in the interpretation of plates, such as pleboliths, glands, night shirt buttons, etc., the technique is constantly improving and a good x-ray by an experienced operator is of the greatest help to the surgeon. A good plate should show the transverse processes of the vertebræ and the structure of the last two ribs; such a plate will show clearly ureteral and renal stones, and, according to expert radiographers, is also of negative value. The plates should show both kidneys and the entire course of both ureters.

According to Leonard nearly 50% of all calculi occur in the ureters. Bevan has mentioned two cases where the symptoms, *i.e.*, pain and tenderness, were on one side, the x-ray showing the stone in the opposite ureter where it was found and removed. The case I shall mention is of interest in this connection. He also points out that in cases where the x-ray is negative it may be impossible to differentiate clinically tuberculosis, hypernephroma, tumor, etc., from stone. A doubtful shadow in the ureter may be verified by passing a ureter catheter with a wire stylet, then having another x-ray and noting the relation of the wire to the shadow as has been done by Brown, Lewis and others.

Sixth. Cryoscopy. Ascertaining the freezing point of the blood is of importance in determining the amount of renal efficiency, — a lowered freezing point showing a lowered efficiency. The normal is ·56° C.

By the employment of some or of all of these methods a differential diagnosis from the various other conditions within and without the kidney can generally be made. These conditions have been briefly alluded to already and time will not allow me to take up the differential diagnosis any more in detail. They include tuberculosis, cancer, cystic kidney, tumor, abscess, floating kidney, etc. However, at times the x-ray will be negative or unsatisfactory, ureteral catheterization cannot be employed and the patient will present an array of symptoms that cannot be definitely interpreted. In such cases the condition can be diagnosed by exploratory operation only.

The treatment of stone may be divided into the expectant and the surgical. The former, according to Bevan, should be limited to the following conditions: (1) When the attacks are infrequent and mild and by x-ray the stones are of a size to be readily passed; but such cases should be kept under close observation; (2) where age or disease in other organs renders the removal of a stone more dangerous than its presence, and (3) where a stone is arrested in the lower end of the ureter when there is hope of assisting its passage by injection of oil or liquid vaseline into the ureter.

Without question surgical removal should be the treatment of most all cases of stone. When the diagnosis has been made early, operation should be most strongly urged as it is at this time that the most brilliant results are obtained with the greatest safety.

Nephrolithotomy is one of the most satisfactory of surgical operations when performed before the kidney substance has been injured or destroyed. When suppurative changes have taken place the indications for surgical interference are none the less imperative, and the course to be followed by the surgeon must be determined by the existing conditions in each case. Time will not permit a discussion of these conditions; suffice it to say that one of the following procedures is open to him: (1) He may cut down upon the kidney to explore it or evacuate any neighboring collection of pus. (2) He may drain the kidney either by opening the pelvis or by splitting the cortex. (3) He may remove the kidney at once or leave it for a subsequent operation.

In bad cases the latter is generally the operation of choice, being done when the patient is relieved of his sepsis, and is often necessary for the cure of chronic fistulæ. The treatment of calculus anuria is immediate single or double nephrotomy, as the case may be.

It is wise if possible to explore the ureter at the time of operation by passing a bougie down through it.

The mortality of nephrolithotomy in uninfected kidneys is about 3%. When septic processes have intervened it is said to be 10%, — a strong argument for early diagnosis and treatment.

In closing I shall refer briefly to a case which illustrates some of the points heretofore mentioned.

The case occurred on the service of Dr. C. L. Scudder, at the Massachusetts General Hospital, who operated and who has kindly allowed me to present it. I had the opportunity to see the patient several times in the Out-Patient Department and with Dr. Davis who made the cystoscopic examinations.

He is forty-one years old and gives the following history. No venereal diseases. He had suffered from attacks of pain in the left loin going down into the left testicle. The first attack occurred when he was sixteen and was constant and severe. He passed a very little blood at times and some gravel after the pain; once a stone the size of a pea. Four years ago he had a severe attack and thinks the stone passed into the bladder at that time. For the last three years he has had bladder pain and symptoms of vesical calculus. All of his previous symptoms were referred to the left side. Multiple vesical stones were readily detected with the searcher and he was recommended for operation for vesical calculi, with question of renal as well. He was cystoscoped later and two good-sized stones seen. An x-ray showed these very well and also a large shadow in the right kidney; nothing in left. His condition was not of the best, so it was decided to remove the bladder stones first and study the condition of the kidneys. The ureter could not be seen with any degree of accuracy at the first cystoscopic examination. A suprapubic cystotomy was done on February 18. He improved very much after this and a second cystoscopic examination was made. This showed apparently nothing, but pus coming from the right kidney and a normal efflux from the left. The left side was catheterized later and some pus was found coming from it as well. On March 7 the right kidney was explored and a large branched calculus was found and extracted with considerable difficulty, as it was intensely adherent. The patient did well. Some urine escaped for a time through the loin, showing that there was active renal tissue left, although at the operation the kidney did not look promising. The patient's condition would not have warranted a nephrectomy at the time.

The interesting points in this case are: (1) That a stone of this size could remain in a kidney so long a time without giving any hint of its presence, or without destroying the kidney entirely. (2) The absolute diagnosis by the x-ray and the confirmatory evidence of the cystoscope, I think without doubt, that the bladder stone came from the left kidney which at present, as far as can be told, is the seat of a slight pyelitis only.

NOCTURNAL PARALYSIS.*

BY ISADOR H. CORIAT, M.D.,
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THE condition that I am about to report, at least in its complete type as here presented, is rather rare. In its slighter and more transitory form, however, it is fairly common in normal individuals. Wier Mitchell,[1] in 1885, first gave particular attention to this disorder, which he named night palsy or nocturnal hemiplegia. In his cases, however, the disorder assumed the type of a mere loss of sensation or a distinct loss of power in one limb or one half of the body, which was more or less protracted after awakening. The palsy always occurred between the half-sleeping and the half-waking state. The only cases reported in the literature in which the paralysis was generalized instead of local are those of Féré.[2] According to him, the disorder only occurs in subjects of neuropathic constitution and is closely related to the exhaustion paralyses. He interprets the condition as the result of a deficiency of physiological excitation affecting the motor and sensory functions. In connection with his cases he found some hysterical stigmata, such as color disorders and a contraction of the field of vision.

Féré reports two cases in considerable detail, and on account of their close resemblance to our observation a brief abstract of each will be given. The first case had marked heredity, suffered from chorea in childhood and finally experienced a severe emotional shock in the death of her husband. This was followed by depression, headache, nocturnal fancies and finally the peculiar condition of night palsy appeared. Towards six in the morning she would awaken, incapable of making any movement, the limbs felt numb, a portion of the limbs seemed wanting and the hands and feet felt as if attached directly to the trunk, analogous to the amputation neuroses. There was total inability to move until some one entered the room. The return of movement in the limbs was accompanied by painful sensations of numbness and prickling, and three hours usually elapsed before a complete restoration of motor power took place. In the second case the patient suffered from ophthalmic migraine for years and, as in the first observation, the general night palsy followed family bereavements. At first there was a generally increasing exhaustion and, finally, on awakening between the hours of four and six in the morning, the patient would find herself unable to move any of her limbs. At first this condition persisted for a few minutes only, then it gradually became prolonged to an hour, during which period there was a loss of consciousness of the entire body. After each attack the gradual return of power was accompanied by the same painful paresthesias as in the first case. Both patients recovered under general hygienic and tonic treatment. My observation follows:

* From the Neurological Clinic of the Boston City Hospital.

[1] Wier Mitchell: Nervous Diseases, 1885.

[2] Ch. Féré: A contribution to the pathology of night; nocturnal paralysis, Brain, xii, pp. 308-325, 1890.

Mrs. B. B., aged thirty-one, first came to the Neurological Clinic of the Boston City Hospital on Dec. 28, 1906, in the service of Dr. Morton Prince. The family history was negative and there was nothing of special interest in the personal history excepting a somnambulistic episode at the age of thirteen, in which she went to the kitchen, filled a teakettle with water and then suddenly awoke with no memory for her actions. In 1903, shortly after the death of her second child, the patient awoke one night from a sound sleep with a sinking sensation and a feeling of inability to move her limbs. This paralysis she described as being complete, with an inability to move any muscle, even the eyelids. After remaining in this condition for a few minutes she became fully awake and conscious, with a cessation of all the symptoms except a feeling of exhaustion, which continued throughout the morning. She had a similar attack the following night and on successive nights for a month, each attack being accompanied by cardiac palpitation, but unassociated with any particular sense of fear. These attacks became less frequent and after a short time completely disappeared. About a year ago, however, without any known cause, the attacks re-appeared and have occurred every night since, with an especially severe attack every Monday night, for which the patient can offer no explanation. During all this period her general health has remained fair. At present she will awaken in the early morning with a choking sensation and a feeling of suffocation, with palpitation of the heart and complete inability to move the body. The hands are usually clasped and the arms extended above the body. During the attacks she is fully conscious, knows what is going on about her, but is unable to open her eyes or to move her limbs even by the strongest exercise of the will. There is no amnesia or haziness of memory after each attack. The dreams are of an indifferent character. She will cry out for aid to move her arms or limbs, but until such aid is given she is unable to make any muscular movement whatever. The attacks usually last from two to five minutes before aid is given. She has no idea of their duration if she were unaided. The physical examination is negative, except a floating right kidney and a complaint of an occasional occipital headache. There are no hysterical stigmata.

Psycho-analytic methods yield the following interesting data concerning the attacks: They began about three months after the death of her second child, who died on a Monday afternoon under distressing circumstances. This acted as a strong emotional shock. Although the child had been ill for three weeks with pneumonia, yet his sudden death was unexpected. On this particular Monday afternoon the patient was alone and was holding the child in her lap. He suddenly reached the arms above the head, showed a general tremor, then became rigid and immediately expired. It will be noticed that the position assumed by the patient in her nocturnal paralytic attacks exactly resembled that taken by her child at the time of his sudden death and, furthermore, the worse attacks always occurred on Monday, the day of the week on which the child died. The coincidence is too pertinent and marked to be called accidental, and it seems, therefore, that we are probably dealing with a recurrent mental state originating in a sudden and distressing emotional shock.

The treatment consisted of waking suggestions

applied by means of a fictitious magnet (tuning fork) and directed toward a complete cessation of the attacks. This was given three times a week, and during the first month only seven attacks of palsy took place, whereas previous to treatment they had occurred every night. These attacks, too, were much lighter; she was able to come out of each voluntarily and to move the paralyzed limbs. As there have been no attacks since, a period of several months, it can be safely assumed that the patient has entirely recovered.

Féré's explanation of the condition is vague and unsatisfactory. Dr. Prince has suggested that the state is analogous to the temporary general palsy that is sometimes observed in patients during and after being awakened from a deep hypnosis.

With entire restoration of the personal consciousness a general paralysis may persist, as in a case which he informs me he has now under observation. In this case the palsy persists some fifteen or twenty minutes, is difficult to dispel and is associated with a general anesthesia. In one of my cases this post-hypnotic palsy persisted for fifteen seconds and the condition in every particular resembled that described in our observation. From recent researches on the various states of dissociated consciousness the interpretation is a very pertinent one. It seems to arise on a neuropathic soil and to follow a strong emotional shock. This is seen in Féré's cases and in our observation. Manacéine [3] has observed a cataleptic condition in different muscular groups in the half-waking or hypnagogic state, the limbs remaining in the strained position in which they are placed for a long time. She considers this half-waking condition as a natural hypnotic state. From the clinical history of our case the disorder can be interpreted as not only closely related to this post-hypnotic palsy, but also as a hypnagogic motor repetition of a previous strong emotional episode. In other words, we are dealing with a recurrent mental state whose chief manifestation is in the motor mechanism. We know how easily sense deceptions can arise in this dissociated hypnagogic condition, and in our case the dissociated complex assumed the picture of general but temporary nocturnal palsy without any concomitant hysterical symptoms. The condition, however, may occur as a momentary sensation in normal individuals, and only when it becomes prolonged and oft repeated can it be considered as having assumed a pathological aspect. The fact of complete recovery by psychotherapeutic methods speaks for the purely functional nature of the disorder.

MEDICAL COLLEGE OF THE UNIVERSITY OF MANILA.—The new medical college of the University of Manila, which will be opened early in September, will pay special attention to tropical diseases. The Philippine government has appropriated $62,500 for the expenses of the first year of the institution.— *Science.*

[3] Marie de Manacéine: Sleep, p. 212, 1897.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

REPORD OF THE TWENTY-SECOND ANNUAL MEETING HELD AT WASHINGTON, D. C., MAY 7, 8 AND 9, 1907.

(Continued from No. 1, p. 25.)

OBSERVATIONS REGARDING THE HYGIENE OF MEDICAL CASES, PARTICULARLY IN HOSPITAL WARDS.

DR. D. L. EDSALL, Philadelphia, reviewed a number of groups of ward infections, part already recorded, part not published, and offered recommendations regarding points in ward hgyiene. He referred particularly to superinduced gastro-intestinal symptoms in typhoid fever patients and to high percentage of typhoid infections among nurses. Statistics showed that in three well-conducted hospitals the percentage of typhoid infections among nurses is 8 to 9 times as high as in the surrounding population. In one especially well conducted hospital typhoid infection among the patients in the wards is 2½ times as frequent as in the remainder of the city. Milk experiments had shown that marked abdominal symptoms may be produced by bad milk, due to infectious organisms present. The author had noticed on four distinct occasions foul, offensive diarrhea in several patients simultaneously. These he considered are due to secondary intestinal infections. A study of 2,600–2,700 consecutive cases of typhoid fever in the Episcopal Hospital, Philadelphia, treated in twenty-seven months, showed a very definite grouping of cases of hemorrhage and perforation. These groups occasionally coincided with the outbreaks of diarrhea. Based upon these data the author recommends more rigid technique in methods of prevention in hospitals. Milk should be pasteurized, unless well certified. There should be a special diet nurse. Sterile applications should be used in handling the mouths of typhoid patients and should not be passed from one patient to another. Bedpans and urinals should be sterilized, as well as their contents. Instructions to nurses should be more stringent.

DR. VICTOR VAUGHAN, Ann Arbor, mentioned the studies in typhoid during the Spanish War. Shakespeare, in a study of 4,000 carefully, observed cases, found 60% due to contact infection, and concluded that the fly was less active as a carrier of infection than had been previously held.

DR. KOBER, Washington, explained the large number of infections among nurses as due in part to the fact that persons between the ages of twenty and twenty-five were most susceptible to typhoid. The importance of milk as a carrier of typhoid infection was suggested by the relative number of epidemics in England and America as compared with the Continent; 90% of typhoid epidemics reported are in England or America, where raw milk is used. On the Continent, where raw milk is rarely used, only 10% of the epidemics occurs. In Washington 50% of typhoid is attributed to milk infection.

DR. PARK, New York, referred to mild epidemics of diphtheria in Children's Hospital, New York, due to carelessness of nurses. He mentioned a typhoid epidemic due to an infected ice-box. He had observed diarrheas produced by special types of milk.

DR. E. G. JANEWAY, New York, emphasized the importance of better care of nurses. Nurses were overworked. They should be allowed more rest. He had seen outbreaks of erysipelas checked by thorough cleansing of the ward. Recently in New York a cook

with typhoid infection without symptoms infected several families — 11 persons in one family, 5 in a second and 2 in a third.

Dr. Abbott, Philadelphia, mentioned an experience in Philadelphia during the winter of 1906–7. One of the men on hospital staff acquired diphtheria; he was isolated until cultures were several times negative. After one week's vacation he returned with a slight coryza. All the patients with whom he came in contact became infected; large numbers of organisms were found in his throat.

Dr. Northrup, New York, said that the watchword must be "eternal vigilance." He referred to the infection of two room-mates with typhoid. They drank distilled water, drank no milk, ate no lettuce nor other uncooked vegetable. The glass jar in which the distilled water was kept gave abundant growth of typhoid organisms.

Dr. Solis Cohen, Philadelphia, referred to the experience of the Presbyterian Hospital; there had been gradually an isolation, in separate wards, of cases of erysipelas, typhoid, pneumonia, owing to the numerous infections when any two varieties of cases were kept in the same ward; patients with transmissible diseases should be in separate wards for these diseases.

Dr. Edsall, in conclusion, agreed that separation should be as complete as facilities allowed. He had not intended to minimize contact infection. Eternal vigilance was most important. Too much responsibility should not be given to the nurse, for accurate investigation would often detect irregularities.

ANTITOXIN AND POST-DIPHTHERITIC PARALYSIS.

Dr. N. J. Rosenau and Dr. J. F. Anderson, Washington: Dr. Rosenau read this paper. All the experiments reported were on guinea pigs. The results, however, might be directly applied to man, as diphtheria and post-diphtheritic paralysis in man and in the guinea pig run an almost identical course. Guinea pigs were treated with a toxin-antitoxin mixture of such strength as to cause no death from toxemia, but paralysis in the second and third weeks and death from paralysis on the twenty-third or twenty-fourth day. To all guinea pigs the same dose of toxin-antitoxin was given. The effects of subsequent administration of antitoxin was tested with the following results: All controls died on the twenty-third or twenty-fourth day. Two hundred and fifty antitoxin units given 24 hours after the primary injection prevented death; 250 antitoxin units given 48 hours after the primary injection did not prevent death; 1,000 antoxin units given 48 hours after primary injection prevented death. Repeated small doses, beginning 24 hours after primary injection, resulted in recovery; repeated small doses, beginning 48 hours after primary injection, resulted in two recoveries, one death; repeated doses, beginning on fourth day — recovery in 1 — modified the course, but did not prevent death in the remainder. The authors conclude that unless seen early patients must be given very large doses, if post-diphtheritic paralyses are to be prevented; that after the development of the paralyses antitoxin treatment seems useless.

EFFECTS OF EGG-WHITE AND ITS SPLIT PRODUCTS UPON ANIMALS. A STUDY OF SUSCEPTIBILITY AND IMMUNITY.

Dr. Victor C. Vaughan and May Wheeler, Ann Arbor. Dr. Vaughan read this paper. For several years he had studied the products obtained by splitting up various proteid molecules. Proteids used had been bacterial, vegetable and animal. All might be split into poisonous and non-poisonous parts. Injections of the non-poisonous parts of B. coli and B. typhosus proteids induced immunity to the respective organisms. About two years ago egg-white was split into poisonous and non-poisonous parts. Drs. Rosenau and Anderson had found that one injection of blood serum produced practically no symptoms in animals, but that if this was followed by second dose serious symptoms, even death, might follow. Such experiments led the authors to try the effect of injections of the non-poisonous part of egg-white on animals. They found that the injection of non-poisonous portion of egg-white sensitizes the animal to the poisonous portion, as well as to the whole egg-white. It does not sensitize the animal to the non-poisonous part. This may be given in successive and increasing doses without producing untoward symptoms. By precipitation of an aqueous solution of the non-poisonous portion with absolute alcohol, two products are obtained which, injected separately, did not sensitize the animal; if they are injected together, however, sensitization takes place. The symptoms produced in sensitized animals by injection of the toxin portion are peritoneal irritation, partial paralysis, clonic convulsions and death. Guinea pigs sensitized require unusual amounts to end fatally. The following explanation is proposed: the body seeks to protect itself from foreign substances. When egg-white or its non-poisonous portion is injected, the body elaborates a new protecting substance in the form of a specific enzyme, capable of splitting this one proteid. To the first dose reaction is slow, the proteid is slowly split up and toxic symptoms are not produced. In the interim, a large amount of this enzyme is formed and stored as zymogen in body cells. On the second injection a large amount of this zymogen is liberated at once, the egg-white is very rapidly split up into poisonous products which are so quickly absorbed that grave symptoms of poisoning are produced. It is probable that this phenomenon is similar to that which occurs when animals are sensitized with the non-poisonous portions of the typhoid or colon bacillus and later inoculated with the living organism.

A REVIEW OF THE EXPERIMENTAL BASIS OF THE OPSONIC PHENOMENON.

Dr. Eugene L. Opie, New York, gave a short review of the development of the opsonic phenomenon. Metchnikoff, twenty-five years ago, had observed that avirulent anthrax organisms were more actively taken up by the phagocytes than the virulent ones. He interpreted this observation as an education of the phagocytes. Wright and Douglas, from test-tube experiments, found that Metchnikoff had underestimated the serum, that in the absence of blood serum phagocytosis was very slight or absent. They found that this applied to many, possibly all, bacteria, namely, that the normal blood serum so modifies bacteria that they are really ingested by phagocytes. The author had found that saprophytic organisms require opsonins to fit them for phagocytic ingestion. Marchand had further found that bacteria of high virulence are but little subject to phagocytosis and that because opsonins fail to activate. Denys and Le Clef, twelve years ago, found that the serum from rabbits' highly immunized streptococci possessed to a high degree the power to promote phagocytosis. Independently Wright and Douglas found the same, and further, that this increased phagocytosis was due to increased opsonic power of the blood serum. They found on inoculation a negative followed by a positive phase in opsonic power. They considered that low opsonic power probably precedes injection and observed that the fluid of the local lesion had lowered opsonic power, that opsonins are specific. The author had found that the fluid from the peritoneal cavity of an animal dead of infection with staph-

ylococcus aureus had no power to opsonify staphylococcus aureus. He had found, further, that in fluid brought out by turpentine application, there was a loss of opsonic power as the fluid changed from serous to purulent and concluded that presence or absence of opsonic power is an inaccurate measure of the grade of infection. The opsonic power of normal blood was subject to such variation that the estimation of opsonic index was inaccurate.

THE OPSONINS IN TUBERCULOSIS.

DR. E. R. BALDWIN, Saranac Lake, reviewed his work on opsonins in tuberculosis. In early experiments he found that serum from animals immunized to tubercle bacilli possessed high agglutinative, but low opsonic, power. Results were unreliable, due to clumping of organisms. He found that tubercle bacilli treated with serum of high opsonic power show greater virulence, more rapid spreading, when inoculated into animals (apparent enhancement of virulence). He offered the explanation that the phagocytes became overladen with the sensitized but still living bacteria, and after wandering from some distance from the point of inoculation break down; the bacteria set free start new foci. In summarizing his results with the technique of the opsonic test he concluded that he, at least, had been unable to obtain accurate enough results to use for diagnostic purposes or as a control to inoculations.

THE OPSONIC INDEX IN CERTAIN ACUTE INFECTIOUS DISEASES.

DR. LUDWIG HEKTOEN, Chicago: Dr. Herrick read this paper. In pneumonia the opsonic index was usually low during the course of the disease, rising after the crisis. Charts were exhibited indicating the variations in opsonic index during the course of scarlet fever. Individual normal variations have been found to be very small — .9 to .11. In nearly all cases of scarlet fever the index to streptococcus was below normal, rising above normal as recovery starts in and remaining about normal during convalescence. Complications were accompanied by depressions in streptococco-opsonic index. These results indicated that the streptococcus is present from the start in scarlet fever. Cases of scarlet fever were now being treated with streptococcus vaccines. In erysipelas, the opsonic index, low during the height, rises as the temperature falls. In diphtheria, antitoxin does not influence the opsonic index. The author suggested that injections of dead bacteria might help in promoting disappearance of organisms in the throat. In acute scarlatinal otitis media suppurativa, pseudo-diphtheria bacillus had been found as the predominating organism. The opsonic index toward this organism was low during height of disease, rising as discharge lessened. In typhoid and paratyphoid infections, opsonic index was low during the height of fever and during relapses, rising during convalescence. The author concludes that the opsonic index is of importance as a diagnostic and prognostic sign.

A SUMMARY OF THE STUDIES ON OPSONINS CARRIED OUT AT THE ROCKEFELLER INSTITUTE.

DR. V. H. SCHRORER, New York: Dr. E. L. Opie read this paper. The studies were concerned chiefly with the opsonic index in erysipelas and with the treatment of erysipelas by injections of killed streptococci. Preliminary tests to determine normal variations and accuracy of method showed variations between .5 and 1.7. Composite charts of results were shown. In erysipelas individual variations were great and often corresponded little with the clinical course. Sometimes the index was high when lesions were extending. In general, the index was low at the start, rose for the first three days and then fell. The increase corresponded with the progress of the disease, the fall with its decline. Therapeutically, vaccines prepared from streptococci isolated from wound infections and cases of erysipelas were administered in fifty cases. No definite conclusions could be drawn from the results. In a comparison with two other series of cases treated in the same hospital, but in different years, with antistreptococcic serum and local measures respectively, the duration of cases treated by vaccines equalled that of cases treated with antistreptococcic serum, but in both it was two days shorter than in cases treated locally. Conclusion reached was that from individual cases very little indication may be obtained as to progress of disease through the opsonic index.

A SUMMARY OF WORK ON OPSONINS AT THE JOHNS HOPKINS HOSPITAL.

DRS. L. F. BARKER and R. I. COLE, Baltimore: Dr. Cole read this paper. Attempts were made to produce high grades of opsonic power. Rabbits treated intraperitoneally, intravenously and subcutaneously with killed streptococci showed indices very little higher than controls. There was one exception. Dr. Klien obtained a very high index in rabbits treated with typhoid bacilli. Serum of those rabbits diluted 1-1000 possessed opsonic power equal to that of normal serum. The bactericidal power was augmented to the same degree. The relation between bactericidal and opsonic substances had not been determined. Like Simon and others, they found opsonins non-specific. Vaccines were employed in fifteen cases of gonorrheal arthritis and several cases of glandular and joint tuberculosis. It was the impression of the authors that the cases did somewhat better than those treated otherwise, although they advised caution in laying too much emphasis on the results in so small a series of cases. They conclude that as a guide to the administration of vaccines, the opsonic index is subject to too great variations to be relied upon.

A SUMMARY OF THE STUDIES ON OPSONINS CARRIED OUT UNDER THE AUSPICES OF THE COMMISSION FOR THE INVESTIGATION OF RESPIRATORY DISEASES OF THE NEW YORK BOARD OF HEALTH.

DR. HERMANN M. BRIGGS, DR. WM. H. PARK and DR. NATHANIEL B. POTTER: Dr. Park presented the chief results of this work. They consider the opsonic index an approximate and not a real index of opsonins in the blood. They found it impossible to reduce the limits of error as low as .8 to 1.2, as proposed by Wright. They find opsonins specific. After inoculations the negative and positive phases were not constant. As a test of vaccine treatment the opsonic index was of little value, giving often less accurate indications than did clinical symptoms. Charts to illustrate this point were presented. The conclusion was that no new era has been introduced in medicine, but that some good may be hoped for from vaccines.

DR. POTTER gave the results of his experience with opsonins. He found wide normal variations in the index of serum toward tubercle bacilli and staphylococci. Several cases of acne had been treated by staphylococcus injections, but without definite results. Two cases were reported: One of otitis media, in which streptococcic vaccines were of no benefit; the second a case of abscess, from which a streptococcus and a bacillus were obtained. The patient developed a septicemia with an index of .73. Vaccination with the streptococcus obtained from the patient with otitis media were followed, after the second injection, by a

virtual crisis. He predicted a promising future for the use of vaccines.

DR. NORTH, New York, reported the results of simultaneous estimations in ten different laboratories in various parts of the country. The purpose was to test the accuracy of the method. Serum was drawn in New York on Monday morning, sent to the various laboratories, so that all estimations might be made on Tuesday afternoon. The organisms used were staphylococci and tubercle bacilli. The patients whose serum was used were normal patients and patients with staphylococcus and tubercle bacillus infections. The average number of bacteria per leucocyte in 100 leucocytes was estimated. The results from the various laboratories were shown on a series of charts. Variations were between 40% and 200%.

DR. T. M. ROTCH, Boston, showed charts representing the effects of lumbar puncture and antitoxin injections upon the opsonic index. In cases treated by vaccines he had apparently found benefit.

DR. L. F. BARKER, Baltimore, said that opsonins had suffered from over-exploitation at the beginning. Tuberculin had a similar career, soon fell into desuetude and is now coming back. Vaccine therapy should not be coupled with opsonic technique. One of the most important results has been the transference of immunity problems from the laboratory to the patient.

DR. ROSS, of England, who has been a co-worker with Dr. Wright for two years, spoke enthusiastically in favor of the opsonic theory and the opsonic technique. He called attention to the difficulty of mastering the details of the technique, suggesting that it would take time for workers in this country to be sure of their results. It had been certainly demonstrated that the opsonic power is low in disease and rises with cure; that a negative phase occurs with untoward symptoms. This has been very clearly shown, *e. g.*, in cases of tuberculous cystitis. After two years of unceasing toil, the speaker has reduced the error to 10%. Under vaccines he had seen the cure of tuberculous dermatitis, adenitis, cystitis, iritis and empyema, furunculosis, sloughing abdominal wounds, and with cure, an increase in opsonic power. He pinned his faith to vaccine therapy and the opsonic theory.

DR. WEBB, of England, who had been a co-worker with Dr. Wright for one year, expressed himself as fully in accord with Dr. Ross.

DR. OPIE regarded the discovery of Dr. Wright as the introduction of a new era in the study of phagocytosis, since it showed the necessity of the serum for phagocytosis.

DR. PARK considered that vaccines have made acne curable, mentioning two cases which had resisted treatment, but recovered under vaccines.

DR. POTTER said there was promise of good results from vaccine therapy, and referred to the experience of Dr. Trudeau with tuberculin.

DR. NORTH believed that at present, for American laboratories at least, estimation of opsonic indices is subject to too great possibilities of error to be trustworthy, inasmuch as the average variation in ten laboratories was 50%.

THIRD DAY, THURSDAY, MAY 9.

ON THE PATHOLOGICAL ANATOMY OF LYMPHOSARCOMA.

DR. W. G. MACCALLUM, Baltimore: The present classification of Hodgkin's disease, lymphosarcoma, round-celled sarcoma, leukemia, chloroma, myeloma, was unsatisfactory. Through ignorance of etiology it was based on mode of growth, histological picture and blood picture. Sternberg's was the best recent classification. A study of a series of cases of lymphosarcoma showed a fairly definite histological picture, such as had been described by Kundrat and others. This, together with the mode of origin, distribution and extension, and with examination of the blood, made it possible to arrive at a definite diagnosis of the condition. Specimens were passed about showing types of lesions, the mode of distribution; specimens of two recent cases involving the lungs were exhibited. The question as to whether lymphosarcoma is tumor or inflammation must be left open for the present.

DR. CHRISTIAN, Boston, in discussion, held that the differentiation of the conditions under discussion was not on a sufficient basis.

DR. WHARTIN, from the study of 30 cases, concluded that there were many border-line cases.

DR. WRIGHT held the same view. A recent case at the Massachusetts General Hospital, which was histologically Hodgkin's disease, was clinically a mediastinal tumor.

DR. MACCALLUM replied that he had never seen a case which was histologically Hodgkin's disease, without the typical distribution of Hodgkin's.

CHYLOUS ASCITES AND CHYLOUS PLEURISY IN A CASE OF LYMPHOCYTOMA INVOLVING THE THORACIC DUCT.

DR. GEORGE DOCK, Ann Arbor, reported a case which showed clinically one large and several small tumor masses in the abdomen, chylous exudate in peritoneal and pleural cavities, moderate enlargement of superficial lymphatic glands and increase of lymphocytes in the blood. At autopsy the diagnosis was made of lymphocytoma. A tumor of the mesentery involved the thoracic duct, which was 4–8 cm. in diameter, without lumen. There were sarcomatous growths in lungs, liver and kidneys.

DR. MACCALLUM, of Baltimore, in discussion, referred to a case which resembled lymphosarcoma, with lymphatic leukemic changes in the blood; a second case similar to Dr. Dock's of lymphatic leukemia, with enlarged glands, which involved the thoracic duct; a third case, in which blood showed for years 90% of lymphocytes, enormous swellings of glands, with autopsy diagnosis of lymphosarcoma.

DR. WARTHIN, Ann Arbor, mentioned 4 cases of lymphosarcoma, which became leukemia. Of 37 cases of Hodgkin's which he had studied, some were of large-celled type, others of type resembling lymphosarcoma. He considered them all to be overgrowths of parent cells of leucocytes, "leukoplastomata."

A DIAGNOSTIC SIGNIFICANCE OF THE IODINE REACTION OF THE LEUCOCYTES.

DR. IRVING P. LYON, Chicago (read by title).

MULTIPLE MYELOMA: THE HISTOLOGICAL COMPARISON OF SIX CASES.

DR. HENRY A. CHRISTIAN, Boston, had studied six cases of multiple myeloma, with a view to determining their relation to one another and to a possible ancestral type of cell in the bone marrow. He showed on the screen photographs illustrating his paper. The cells of myelomata had been supposed by different observers to come from premyelocytes, myelocytes, lymphocytes, plasma cells or erythroblasts. All agree that they originate in the bone marrow. The study of the six cases showed tumors characterized by similar high degree of cellularity and by cells of only minor variations. The nature of this cell type had not been determined. It much resembles the plasma cell, but presents certain differences. There was no evidence of erythroblastic origin.

THE HISTOLOGICAL LESIONS IN EXPERIMENTAL GLANDERS. FROM THE LABORATORIES OF PATHOLOGY AND BACTERIOLOGY, McGILL UNIVERSITY.

DR. C. W. DUVAL, Montreal, reported the results of histological study of experimentally produced glanders. He showed lantern slides to illustrate the characteristic lesions. Histological changes were found to fall into three classes, — exudative, proliferative, degenerative. They varied directly with the virulence of the organism. Slides were shown to illustrate fibrin thrombi in the spleen; chronic proliferative changes in the adrenal, with necrosis, surrounded by epithelial cells; focal necrosis in the liver; tubercles in the lungs; giant cells and proliferative changes in tunica vaginalis of guinea pigs; myocardium of rabbits with focal collections of lymphoid and plasma cells; giant cells in endothelium of blood and lymph spaces; tubercles in spleen; degenerative changes in inner zone of media caused by killed bacteria.

DR. MACCALLUM, Baltimore, referred to a case of experimental glanders in man accidentally produced. In this case there was a caseous pneumonia, from which pure cultures of the organism were recovered. In places there was complete necrosis.

THE ANTAGONISTIC ACTION OF ALCOHOL AND CARBOLIC ACID.

DR. A. E. TAYLOR, Berkeley, Cal.: Alcohol was commonly considered as antagonistic to the action of carbolic acid. The following method of testing the matter was employed. A yeast tolerant to alcohol in concentration of nearly 15% was selected. This was placed in a standard solution of sugar; to this was added carbolic acid and alcohol in varying strengths. The carbonic acid evolved was measured as an index of the activity of the yeast, and it was found that the alcohol exerted no direct antagonistic action toward the antiseptic action of the carbolic acid. The author considers that alcohol acts merely as a solvent to carbolic acid and not as an antagonist.

DR. SOLLMAN, Cleveland, had observed that in experimental application of carbolic acid to the skin, followed by alcohol, the alcohol had apparently only a solvent action. In the stomach alcohol promoted absorption, though probably entirely apart from its action upon the carbolic acid.

DEMONSTRATION OF LARGE PHAGOCYTIC CELLS FROM THE CIRCULATING BLOOD.

DR. H. A. CHRISTIAN, for DR. F. VAN NUYS, Boston, passed about photographs of some large phagocytic cells found in the blood in a case of aortic insufficiency, chronic bronchitis, with indefinite tumor symptoms. There was no autopsy. Great variations in the blood count.

DR. CABOT, of Boston, referred to a case of aortic regurgitation, no tumor, no autopsy; leucocyte count high — 200,000 per cmm., from the ear, while count from the finger was only 10,000. He found that great variations in the count were due to clumping of leucocytes.

UNCLASSIFIED FEVERS.

DR. JAMES TYSON, Philadelphia, passed about charts and histories of a number of cases which were difficult to classify. They did not correspond with the typical picture of typhoid fever, influenza, malarial fever or other fever due to discoverable causes. He suggested that the Association might well take up the study of such cases in order to find if possible a proper classification.

A CONTRIBUTION TO THE STUDY OF LONG-CONTINUED FEVERS.

DR. H. C. MOFFITT, San Francisco, reported a case of long-continued fever and discussed the differential diagnosis. The patient was a woman over forty-seven; lues thirteen years before; cough every winter for ten years; appendix operation eight years before; attacks of abdominal pain suggesting cholelithiasis. Examination showed: old process at apices; pupils irregular, slow reaction to light; heart dilated, systolic murmur; no glands; spleen never palpated; abdomen distended, no tenderness; no pigmentation. Possibilities in diagnosis were: syphilis of liver, abscess of liver, lymphosarcoma, typhoid, malignant endocarditis, hepatic fever, pyelitis, tuberculosis. Treatment with mercury and iodides, later arsenic and x-ray, were unavailing and death occurred. Autopsy diagnosis was lymphosarcoma of one retroperitoneal gland, near right kidney, multiple nodules in liver.

DR. CABOT, Boston, in discussion, said that in the Massachusetts General Hospital, over 90% of all fevers of more than two weeks' duration were typhoid, sepsis or tuberculosis.

DR. STENGEL, Philadelphia, mentioned a case of long-continued fever, with a mass in the abdomen found at operation to be tuberculous retroperitoneal glands. Arteriosclerosis might also be a cause of long-continued fever.

DR. S. W. MITCHELL, Philadelphia, suggested that long-continued fever might be due to a disturbed heat regulatory mechanism; there might be a subnormal temperature following attacks of lumbago.

DR. GEORGE DOCK, Ann Arbor, reported a case of long-continued fever which eventually proved to be a case of syphilis.

DR. WM. THAYER, Baltimore, referred to two cases of lymphosarcoma involving the liver, and to the case of a trained nurse who had sweats, high fever, jaundice and enlarged liver, which proved to be one of carcinoma of the liver.

DR. R. H. FITZ, Boston, spoke of a case not yet diagnosed, with enormously enlarged spleen, fluid in abdominal cavity, induration of liver, no increased leucocytosis. Professor Mueller considered it one of chronic tuberculosis with possibility of Banti's disease.

FURTHER STUDIES ON THE SPIRILLA OF RELAPSING FEVER.

DR. F. G. NOVY, Ann Arbor: Since the paper delivered at last meeting, showing the existence of two and possibly three distinct types of relapsing fever, several foreign workers had confirmed the specific differences between Spirillum Obermeieri and Spirillum Duttoni. The type of relapsing fever which occurs in India is probably equally distinct. It does not react to the serum produced by the previously studied types. Cultivation in vitro had not yet been successful. Cultivation had been accomplished, however, by filling collodion sacs with blood, inoculating, and placing in peritoneal cavity of the rat. No growth obtained when capsules were placed in peritoneal cavity of rabbits. After 70 successive passages through rats, attempts at growth in vitro failed.

ON THE MEASUREMENT OF FUNCTIONAL HEART POWER.

DR. RICHARD C. CABOT, Boston: Methods ordinarily employed for examinations for the heart — auscultation, percussion, radiography, study of pulse and blood pressure — tell but little as to the amount of power possessed by the heart. It was important to measure the strength of the heart muscle early in both organic and functional diseases. Many attempts had been

made to accomplish this. Chapiro and others had studied the difference in rate between lying and standing; after a study of 100 cases they found that this difference was diminished only in pronounced cases. More recently other methods have been tried. Of these the author had had personal experience with the following: Graupner's method, Herz's method and Levy's method. He had studied a number of cases with Graupner's method and obtained results which were promising. He showed charts and blood pressure during the tests. In cases of definite advanced disease of the heart the blood pressure curve was modified, the rise either much delayed or absent. Similar curves were obtained in cases of phthisis and arteriosclerosis, in which the usual methods would have justified the note, "heart normal."

OBSERVATIONS UPON CERTAIN REFLEXES, LOWERING BLOOD PRESSURE, WHICH ARISE FROM STIMULATION OF THE INFLAMED PLEURA.

DRS. JOS. A. CAPPS and D. D. LEWIS, Chicago: Dr. Capps read this paper. Experiments were undertaken to explain the untoward effects of intrathoracic operations — faintness, dizziness, low blood pressure, syncopy, collapse, intermittent pulse, even death — with negative autopsy findings. It was found that in healthy dogs irritation of the pleura by mechanical, thermal, chemical and electrical stimuli caused very little change in blood pressure. In dogs, however, in which an artificial pleurisy had been set up by turpentine injection, marked reflex changes were produced with blood pressure by irritation of the inflamed pleura. The changes were due to combined vagal and vasomotor action. They were checked by cutting the vagi, by administration of atropin, and lessened by adrenalin.

CLINICAL AND PATHOLOGICAL STUDIES OF ARTERIOSCLEROSIS.

DRS. W. S. THAYER and M. FABYAN, Baltimore: Dr. Thayer read this paper, which consisted of a clinical and pathological study of the radial arteries in 40 cases, with a consideration of the distribution of arteriosclerotic changes. In comparing clinical with histological findings it appeared that many radial arteries which were definitely palpable were histologically normal. Photographs illustrating the findings were passed about.

CEREBRAL TYPES OF ARTERIOSCLEROSIS.

DR. ALBERT STENGEL, Philadelphia, spoke of types of cerebral manifestations of arteriosclerosis. Convulsive attacks, sometimes followed by coma, had been observed, simulating closely uremia, but with negative urinary findings. A case was referred to of a broken-down old man with loss of compensation, with very atheromatous arteries, history of two previous attacks of uremic convulsions. Patient was in coma. Following cardiac and general stimulation recovered from coma; later relapse and died, without autopsy. Albumin was never found in his urine.

FURTHER STUDIES ON EXPERIMENTAL ARTERIOSCLEROSIS.

DRS. I. ADLER and O. HENSEL, New York: Dr. Adler, who read this paper, reported the results of experimental and statistical studies of arteriosclerosis in rabbits. Previous experiments had seemed to show that as a result of injections of nicotine into rabbits arteriosclerotic changes are brought about identical with those of man. In the present series a much larger number of observations were made, 90 rabbits being experimented upon, 52 of which received injections of nicotine; of these only 9 showed signs of arteriosclerosis. Rabbits treated with barium chloride and with lead fail to develop arteriosclerosis. The authors conclude that arteriosclerotic changes occur spontaneously in rabbits not experimented upon, probably as a result of disease or senility; that the injections may possibly serve to augment an existing or bring out a latent condition; that there is no evidence that the substances injected ever cause of themselves arteriosclerosis.

DISCUSSION OF ARTERIOSCLEROSIS.

DR. JACOBI, New York, said there is a great variation in the location of arteriosclerotic changes. He laid much emphasis on sudden change of temperament as an early sign of cerebral arteriosclerosis.

DR. WEAVER reported two cases, both men over seventy, one dead, one living, who had convulsions simulating uremia but with no albumin or casts in the urine.

DR. SAILER, Philadelphia, mentioned three patients who had uremic convulsions with negative urine who improved under mercury.

DR. W. S. THAYER, Baltimore, said that in most cases in which there was thickening of the radials there was also similar change in the aorta. He emphasized the fact that the regressive changes in the radials are accompanied by calcification — that they occur principally in the media; whereas changes in the aorta take place mainly in the intima.

TYPHOID AORTITIS.

DR. A. S. WARTHIN, Ann Arbor, said the early lesions of typhoid endo-aortitis had been little studied. He had studied two cases in which lesions in the aorta were well marked, and lantern slides were shown illustrating the lesions found. The author considered the lesion a forerunner of arteriosclerosis and emphasized the fact that it is primary in the intima.

THE MODE OF CLOSURE OF THE DUCTUS ARTERIOSIS AND ITS BEARING UPON THOMA'S THEORY OF ARTERIOSCLEROSIS. FROM THE LABORATORIES OF PATHOLOGY AND BACTERIOLOGY, MCGILL UNIVERSITY.

DR. OSCAR KLOTZ, Montreal. (Read by title.)

MOTOR INSUFFICIENCY DUE TO PERIGASTRIC AND DUODENAL ADHESIONS.

DR. FRANK BILLINGS, Chicago, said perigastric adhesions occur mainly with diseased gall bladder, surgical operations and gastric ulcer. Symptoms were those referable to the underlying cause and those primarily due to adhesions. Of the latter were depression after eating, abnormal amount of gas in the stomach. Examination showed diminished motility of stomach. In treatment it was important to keep in mind the patient, especially if neurotic. One man who had undergone 15 operations for adhesions recovered completely when treated for his nervous condition.

DR. MUSSER, Philadelphia, in discussion, reported a case of typhoid fever with cholecystitis; on subsidence of temperature vomiting occurred; adhesions were found involving duodenum and gall bladder.

GASTRIC DISTURBANCES ASSOCIATED WITH THE PRESENCE OF AN EXCESS OF ACID.

DR. JOS. SAILER, Philadelphia, reviewed the usual methods of determining total quantity of hydrochloric acid and spoke of the method proposed by Sahli, of passing flour and butter into the stomach and estimating amount by percentage of fat in the fluid recovered. His own studies with the method of using dilute ferrous sulphate showed the limit of error to be 50%. He summarized 715 cases, giving the results of stomach analyses.

ON THE LENHARTZ TREATMENT OF GASTRIC ULCER AND HYPERCHLORHYDRIA.

DR. S. W. LAMBERT, New York, spoke of the practical objections to the old method of treating these conditions, principally depletion of the patient. The Lenhartz treatment consisted in frequent small meals of easily digested food in gradually increasing amounts. Eight cases were reported with recovery in all but one. The writer found that this mode of treatment cured more rapidly than former methods and without depletion of strength.

DR. JACOBI, New York, reported good results from two-hourly feedings; he used calcine magnesia combined with alkalies seven minutes before meals to diminish the acidity.

THE EFFECTS OF NAUHEIM BATHS ON BLOOD PRESSURE.

DR. P. K. BROWN, San Francisco: Dr. Brown's studies show that blood pressure is raised by the Nauheim bath at temperature of 94° to 98°. This rise seemed dependent upon the presence of calcium chloride. There were exceptions; blood pressure was not raised in exophthalmic goiter, pericarditis with effusion, paroxysmal tachycardia, and marked valvular disease. It was especially valuable in chronic valvular disease, and in chronic and acute poisonings.

THIRD DAY, THURSDAY, MAY 9.

JOINT SESSION WITH THE AMERICAN PHYSIOLOGICAL ASSOCIATION.

ACIDOSIS.

DR. E. P. JOSLIN, spoke for the physicians, reviewing the development of the theory of acidosis. He spoke of the importance of ammonia increased in the urine in acidosis. The important acid eliminated is B-oxybutyric, "the great alkali robber" (Magnus Levy), which has reached 180 gm. in twenty-four hours. He referred to the studies on the blood, its reaction and its CO. 2 content. He discussed the cause of symptoms in diabetes and other conditions, taking issue with von Noorden, who holds diabetic coma due to the acid. He considered the treatment as hopeful. Important in treatment was the ingestion of a few grams of sugar, of more avail, the author thought, than much alkali.

DR. OTTO FOLIN, for the physiologists, presented a critical review from a biochemical standpoint, of the more important concepts in the theory of acidosis. He spoke of the development of knowledge concerning the relation between acetone, B-oxybutyric acid, and acetoacetic acid. He referred to the recent work showing that fatty acids are the chief source of this group of substances; also that in the splitting of fatty acids the break occurs at the third carbon atom — the so-called B-oxidation theory. A chart was shown illustrating this theory. He referred to the alkali in treatment of acidosis and to the difficulty of explaining its action.

DR. WENDEL, New Haven, spoke of the importance of the study of alkali loss and retention in diabetes and in other conditions. He referred to the work of Thayer and Hazen on calcium metabolism. He suggested that the ammonia production might be increased, giving rise to undue production of acid.

DR. L. F. BARKER, Baltimore, said that fatty acids are among the products of proteids; hence proteids may give rise to acetone bodies. He spoke of the remarkable adaptability of the body, which seems capable of using intermediary products of digestion for neutralizing excess of ammonia. He suggested that disturbance in specific oxidases might account for inability to break down B-oxybutyric acid. He mentioned Mueller's use of phenolphthaleine internally to indicate at once the point of alkalinity of the urine.

DR. THAYER, of Baltimore, reported a case of acid intoxication with diacetic acid in the urine, in a child, following operation, which improved under sodium bicarbonate.

DR. TAYLOR, Berkeley, Cal., spoke of the discrepancy between symptoms and amount of acidosis. In non-diabetic conditions most pronounced symptoms occur with small amount of acetone bodies in the urine. In diabetes symptoms of acid intoxication might be absent for months with large amounts of these bodies present. This suggested that other acids than those known may cause the symptoms.

DR. FOLIN, in concluding, admitted that other acids than the ones mentioned might cause symptoms. He took issue with the idea of derangement of ferment action in general, as too indefinite at present. He considered it an open question whether the acids are produced to neutralize the alkali or vice versa.

DR. JOSSLIN said, in conclusion, that coma might ensue if the diet were suddenly made carbohydrate free. Recent work had shown that the treatment of coma must be the same as formerly — administration of proteid and fat, no carbohydrates. He agreed with Dr. Taylor in the distinction between forms of acidosis.

Book Reviews.

Der Diabetes Melitus. By DR. B. NAUNYN, formerly Professor in Strassburg University. Second edition. Vienna: Alfred Hölde.

Professor Naunyn has made us all his debtors by supplementing his original monograph upon diabetes mellitus with a new edition. Like its predecessor, this volume holds its place as the foremost on the subject. This is not strange, for it is from the Strassburg school that so many investigators along this line have derived their inspiration. Although the book remains of the same size, the enormous amount of recent literature has been most painstakingly and critically reviewed, and thus replaces those portions of the work which, on account of their original character, were detailed at length in the first edition.

During the eight years that have elapsed since this appeared the doctrine of acidosis has found general acceptance, and the source of B. oxybutyric acid from the members of the fatty acid series with an even number of carbon atoms seems probable. Levulosuria, pentosuria, suprarenal and submaxillary glycosurias, the new views which have arisen concerning the pancreas on account of the part played by the islands of Langerhans, and the etiological importance of the various albumins, are subjects which all receive careful discussion.

The section on treatment has been enlarged, and convincing proof afforded of the desirability of the most careful attention to diet. Indeed, one must read Naunyn's book to catch the true spirit of the modern treatment of diabetes mellitus. The style is clear, terse and fresh from beginning to end.

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A MEDICAL MEETING IN TURKEY.

DURING the last week of this month a medical meeting will take place in Aintab, Turkey, which is the first ever held in that country. This meeting is another evidence of the progress of practical Christianity, since it has been planned by the American Board of Foreign Missions, in which is represented the only modern medical service of that country.

The need of such a meeting as this is likely to be is not to be questioned. It has long been a well-known fact that the Oriental is slow in adopting modern methods and that the loss of human life resulting from ignorance has been and still is appalling. It is, therefore, significant that the attempt is to be made in systematic fashion to spread the gospel of modern medicine in this somewhat benighted country. Delegates to the convention will naturally be in great part those who are working throughout the country as missionary physicians. A prominent Turkish physician, Dr. Altoonian, of Aleppo, is, however, expected to be present. Other delegates are expected from Van and Constantinople, separated by a distance of about eight hundred miles. Among these will be two Germans.

In matters of surgery the native profession in Turkey is peculiarly ignorant. The methods still adopted are both crude and cruel, and are often provocative of disease rather than curative. The native doctors will be welcome at the public sessions of the meeting, which are designed to give instruction, through illustrations and by other means, in matters relating to bacteriology and pathology. The general topics of the meetings, however, will cover a wide field, as, for example, cholera, typhus, pneumonia and malaria; the need of native trained nurses; cataract and its operations; x-ray work; scope of medical missions in promoting municipal sanitation and personal hygiene; hospital buildings and their plans. During the morning there will be clinics, operations and a demonstration of laboratory methods, and a certain time will also be given for recreation.

There can be no doubt that such a meeting will serve as an admirable object lesson to the native physicians who may be in attendance. It is equally evident that through these native physicians the practice of the country must ultimately be conducted. The few outsiders who may be there in the capacity of medical missionaries, or in other capacities, can do much by way of example and precept, but comparatively little by actual work. The campaign there as elsewhere must primarily be one of education. This, no doubt, will be a slow and difficult process, but it is evidently the only one, if the native population throughout the country is ultimately to be reached by modern medical methods. Such a meeting as the one to which we allude, and to which reference is made by Miss Frances J. Dyer, in the July number of the *Dietetic and Hygiene Gazette*, cannot fail materially to further the cause.

ACCIDENTS OF JULY FOURTH.

IN spite of the somewhat determined agitation against the careless use of explosives on the Fourth of July and the innumerable warnings, both from the professional and lay press, against the dangers especially associated with certain types of noise-producers, comparatively little progress apparently has been made in reducing the number of deaths and accidents. In Boston during the period from six o'clock on July 3 to midnight on July 4, fewer accidents were reported at the large hospitals than during the same period in 1906. Thirty-four were treated at the City Hospital this year, as contrasted with 42 last; 46 at the Relief Station, as contrasted with 51, and only 18 at the Massachusetts General Hospital, as against 40 in 1906. This showing is certainly gratifying and possibly bears some relation to the fact that only 150 arrests were made this year as compared with 383 last, for violations of the city ordinance in relation to the discharging of firearms and fire-crackers and the blowing of horns.

The compiled reports, however, tabulated by the Chicago *Tribune*, do not give the year throughout the country so good a record. At 3 A.M., the

second day after the Fourth, the *Tribune* had recorded 59 deaths and 3,807 injuries, a death-rate which was equalled, but not passed, in 1900 and 1905. The list of injuries is the longest as yet tabulated. Pittsburg apparently leads cities in the United States in the number of killed and injured, with New York second on the list. Up to 10 o'clock on July 5, fifteen violent deaths had been reported in the former city. As usual most of the casualties were due to carelessness in handling powerful explosives. There seems to be some slight improvement in the popular attitude toward the toy pistol. Figures compiled the day after the Fourth showed only 205 victims as against 304 last year. The results of injuries by toy pistols cannot, of course, be immediately known. It is altogether probable, however, that the protest against this form of enjoyment in the hands of the young has borne fruit and that the number of fatalities from tetanus will be smaller than heretofore. We should certainly have decidedly more encouraging figures in the coming years.

MEDICAL NOTES.

HERTER LECTURES. — According to the *Journal of the American Medical Association*, the next annual course of lectures on the foundation established by Dr. and Mrs. C. A. Herter will be delivered about the end of April, 1908, by Edward A. Schaefer, LL.D., ScD., F.R.S., professor of physiology in the University of Edinburgh, Scotland.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. — The Rockefeller Institute for Medical Research has adopted the following series of titles for its staff: Member, Associate Member, Associate, Assistant, Fellow and Scholar of the Rockefeller Institute, and has made the following list of appointments:

Simon Flexner, Member of the Institute and Director of the Laboratories (pathology); S. J. Meltzer, Member of the Institute (physiology and pharmacology); E. L. Opie, Member of the Institute (pathology); P. A. Levene, Member of the Institute (biological chemistry); Hideyo Noguchi, Assistant of the Institute (pathology); John Auer, Assistant of the Institute (physiology); Alexis Carrel, Assistant of the Institute (experimental surgery); J. W. Jobling, Assistant of the Institute (pathology); Nellie E. Goldthwaite, Assistant of the Institute (chemistry); C. M. A. Stine, Fellow of the Institute (biological chemistry); Donald Van Slyke, Fellow of the Institute (biological chemistry); Martha Wollstein, Fellow of the Institute (pathology); Maud L. Menten, Fellow of the Institute (pathology); Mabel P. Fitzgerald, Fellow of the Institute (bacteriology); Don R. Joseph, Fellow of the Institute (physiology); Benjamin T. Terry, Fellow of the Institute (protozoölogy); Bertha I. Barker, Scholar of the Institute (pathology); Thomas W. Clarke, Fellow of the Institute (pathology).

Grants to aid special researches have been made to the following: Robert M. Brown, New York; C. H. Bunting, Charlottesville, Va.; Katherine Collins, New York; Cyrus W. Field, New York; N. B. Foster, New York; Joel E. Goldthwait, Boston; Holmes C. Jackson, Albany; Arthur I. Kendall, New York; Waldemar Koch, Chicago; W. G. MacCallum, Baltimore; Wilfred H. Manwaring, Bloomington, Ind.; J. W. D. Maury, New York; F. G. Novy, Ann Arbor; W. Ophüls, San Francisco; Richard M. Pearce, Albany; H. T. Ricketts, Chicago; Hermann W. Schulte, New York; Charles E. Simon, Baltimore; Aldred S. Warthin, Ann Arbor; Francis C. Wood, New York.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 10, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 48, scarlatina 28, typhoid fever 12, measles 53, tuberculosis 38, smallpox 0.

The death-rate of the reported deaths for the week ending July 10, 1907, was 14.97.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 6, 1907, was 160, against 168 the corresponding week of last year, showing a decrease of 8 deaths and making the death-rate for the week 13.69. Of this number 90 were males and 70 were females; 158 were white and 2 colored; 94 were born in the United States, 61 in foreign countries and 5 unknown; 31 were of American parentage, 112 of foreign parentage and 17 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 53 cases and 3 deaths; scarlatina, 25 cases and 3 deaths; typhoid fever, 8 cases and 3 deaths; measles, 61 cases and 3 deaths; tuberculosis, 43 cases and 19 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 9, whooping cough 0, heart disease 24, bronchitis 3 and marasmus 1. There were 13 deaths from violent causes. The number of children who died under one year was 34; the number under

five years, 43. The number of persons who died over sixty years of age was 43. The deaths in public institutions were 65.

There was 1 case and 1 death reported from cerebrospinal meningitis during the week.

A Centenarian. — Michael Maloney died in Monson, Mass., July 2, at the reputed age of one hundred and two. He was a successful farmer in the town of Brimfield for forty years.

Experts for the Examination of Mrs. Mary Baker G. Eddy. — Judge Edgar Aldrich, of the Federal Circuit Court, has been appointed by Judge Chamberlain, of Concord, N. H., to take evidence as to Mrs. Eddy's competency to care for her property interests. Judge Aldrich has stipulated that in this task he have expert aid. Drs. G. F. Jelly, of Boston, and G. Alder Blumer, of Providence, R. I., were appointed to serve with him. Since this announcement was made, it has been stated that Dr. Blumer has declined to serve, because of absence from the country during the summer months, and that Dr. Jelly has accepted.

A New Danger from Arsenate of Lead. — It is reported that many cattle have died in Essex and Middlesex counties in Massachusetts, where arsenate of lead has been used in the attempt to destroy gypsy and brown-tail moths. The theory is that the arsenate of lead sprayed over the foliage and on the grass is a source of poison to the cattle who may be browsing. Naturally, precautions are taken to avoid this contingency, but the fact that certain cases have occurred should necessitate still greater care in the future. The possibility of the poison finding its way into vegetables designed for human consumption is a remote contingency, but one which should be borne in mind.

NEW YORK.

Summer Home for Sick Babies. — The summer home for sick babies connected with the Rockefeller Institute was opened for the season on July 1. The old Schermerhorn mansion, on the banks of the East River, which was included in the tract of land purchased for the Institute, has been fitted up for the reception of sixty patients, and infants from all over the city are admitted. Drs. Morden and Van Ingen are the attending physicians, and Dr. Linsly R. Williams is consulting physician. While the administration of the home is under the auspices of the New York Association for Improving the Condition of the Poor, all the expenses of maintenance are paid by Mr. Rockefeller.

Injuries by Firearms. — Despite the warnings of Police Commissioner Bingham against the illegal and indiscriminate use of guns and revolvers in the observation of Independence Day, and despite a large number of arrests for breach of the law, there were five persons killed, and the police reports show at least 126 injured in the boroughs of Manhattan and the Bronx from this cause. It is to be noted that a large proportion of those arrested for violation of the firearms ordinances were foreigners. Up to midnight on July 4, 367 casualties in all, due to pistols and fireworks of various kinds, were reported from the hospitals and by the police. Every hospital in the city which receives accident cases had its full share of them and the ambulance service was over-worked.

Report of Health Department. — The weekly reports of the Health Department show that during the month of June the mortality in the city represented an annual death-rate of 16.65, as against 17.49 in May and 16.00 in June of last year. Among the diseases in which there was a diminished fatality were the following: the weekly average of deaths from whooping cough decreased from 9 in May to 7.5 in June; the weekly average from cerebrospinal meningitis, from 22.25 to 14.25; from pulmonary tuberculosis, from 184 to 165.25; from acute bronchitis, from 19.75 to 13.75; from pneumonia, from 115.5 to 86.75; from organic heart diseases, from 145 to 141.25; from Bright's disease and acute nephritis, from 115 to 101; and from cirrhosis of the liver, from 21.25 to 16. Among the diseases which showed an augmented mortality were the following: the weekly average of deaths from measles increased from 18.75 to 29.25; from scarlet fever, from 21.25 to 26; from diphtheria and croup, from 34.5 to 38; from cancer, from 57.5 to 64.5; and from apoplexy, congestion and soften- of the brain, from 47.5 to 48.75. The special feature of the statistics of the month is the remarkably low mortality, for the season, from diarrheal diseases. The number of deaths from these was just about the same as in May, while in the last week of the month of June, when a somewhat notable increase is always anticipated, the deaths were considerably fewer than in any of the other weeks. In the week ending June 29, there were only 38 deaths (as against 166 in the corresponding week last year), while the average for the other weeks of the month was 61. During this week there was not a single death from diarrheal disease in the whole Borough of the Bronx, a most unusual circumstance.

Obituary.

RICHARD HENRY DERBY, M.D.

DR. RICHARD H. DERBY died at Litchfield, Conn., July 4, 1907. He was sixty-three years of age, having been born in Boston, March 12, 1844. His father was Elias Hasket Derby, of Boston, and his mother was Heloise Lloyd Strong, of New York. He was descended from good stock on both sides. His Derby forefathers, the well-known family of that name in Salem, Mass., were among the most prominent shipping merchants of their time in this country. During the Revolution they played a patriotic part, helping their struggling country with money, men and ships. One of them carried in his own vessel, the *Quero*, the first news of the Battle of Lexington to England; one of them owned the ship, *Columbia*, whose captain discovered and named the great Oregon River.

Dr. Derby graduated at Harvard College in 1864 and from the Harvard Medical School in 1867. He served the usual term as house surgeon at the Massachusetts General Hospital and then went to Europe to continue his professional studies. He there devoted himself especially to diseases of the eye. On his return home in 1870, he settled in New York and entered upon practice as an oculist. He was an active and very influential member of the staff of the New York Eye and Ear Infirmary and for some years had been the Senior or Executive Surgeon. He was a member of the New York State Charities Aid Association, of the New York Academy of Medicine, of the American Ophthalmological Society, and a trustee of the New York Institution for the Blind. At one time he was much interested in matters connected with quarantine, with the Health Department of the city of New York, and in the condition of tenement houses. He was a vestryman of Trinity Church in New York, which is a large owner of tenement house property, and was always interested in church affairs. For some years past Dr. Derby had been a member of the Advisory Board of the Health Department and in these several capacities had done much to combat the increasing spread of trachoma. He was for many years a member of the Century Club.

In summer he had been devoted to yachting and had cruised the coast many times from Long Island Sound to the British provinces. He was also fond of fishing and of botany and had given much attention to the trees and shrubs and wild flowers on the coast of Maine, especially as found at Islesboro, where of late years he made his summer home. His was a wholesome, helpful, useful life. He made and kept many friends in all classes of society and all walks of life.

Dr. Derby was married, in New York in 1877, to Sarah Coleman Alden, who died in Algeciras, Spain, last March. He leaves three sons, and a daughter who is the wife of Dr. P. A. Tucker, Professor of Chemistry at Columbia College. The oldest son, having the same name, follows his father's profession in New York.

Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. JUNE 15, 1907.

1. SAVAGE, G. C. *The Duality of Man.*
2. CAMPBELL, R. E. *Venous Angioma of Skin Showing Beginning Malignancy.*
3. JACK, E. E. *Cataract Extraction.*
4. WEEKS, J. E. *The Incision for the Extraction of Cataract and the Iridectomy.*
5. FOX, L. W. *The Delivery of the Lens for the Extraction of Cataract; Irrigation of the Anterior Chamber and First Toilet of the Wound.*
6. *BOWDITCH, V. Y., and GRIFFIN, W. A. *Subsequent Histories of 160 "Arrested Cases" of Tuberculosis Treated at the Sharon Sanatorium, 1891–1906.*
7. *SOPER, G. A. *The Work of a Chronic Typhoid Germ Distributor.*
8. HOELSCHER, J. *The Medicine and Surgery of Three Gastro-intestinal Cases.*
9. *BROWN, P. K. *Remote Effects of Tonsillar Infection.*

6. Bowditch and Griffin briefly summarize the results, so far as they have been traced, of cases discharged from the Sharon Sanatorium as "arrested" in the fifteen years ending with January 1, 1906. Of these 83% are known to be living and well, 3% were doing well when last heard from but have been lost sight of, and 13% have relapsed and died. Of the last 81 of these cases 95% have remained apparently well. The diagnosis in all cases was proved either by the finding of bacilli in the sputa, by the tuberculin test, or by the presence of marked signs in the chest which, combined with the history, made the diagnosis undoubted. These results are published as evidence of what can be accomplished in sanatoria, since these 160 cases occurred in a total of only 327 cases treated. Attention is called also to the educational value of such institutions, and of the dispensaries for the guidance of home treatment. In conclusion, however, it is stated with emphasis that the influence of climate is a factor, the importance of which must not be disregarded.

7. Soper describes a family epidemic of typhoid fever in which after investigating without result the commoner sources of infection, attention was directed toward the previous history of various members of the household. It was found that a new cook had come to the house about three weeks before the disease broke out and had left three weeks after the appearance of the disease. This woman was traced, and on investigation it was found that in the past ten years she had lived with eight families, and that in seven of these typhoid fever had occurred following her arrival. No history of illness could be obtained in her case, but on the strength of the occurrence of these epidemics the New York Board of Health sent her against her will to the Detention Hospital. Her blood was found to give a positive Widal reaction, and bacteriological examination of the fæces showed typhoid bacilli to be present in great numbers.

9. The pathologic conditions that appear as the late results of tonsillar diseases are discussed by Brown, who first remarks that the importance of this source of infection for heart disease has been pretty thoroughly exploited and that he has himself reported in a previous paper some typical cases and reviewed the literature. Since then he has observed recurrent endocarditis, chorea and muscular rheumatism occurring in certain of his old patients, and he considers that continued slight fever in children is probably a common result of tonsillar disease in San Francisco. A rather peculiar complication of pericarditis, pneumonia and lung abscess is reported. Nephritis after tonsillitis without rheumatism is, he thinks, a commoner complication than is generally supposed and has occurred four times in his cases. One of these, complicated by acute mania, is reported, as also one of fatal staphylococcic septicemia and one diagnosed as leukemia occurring in connection with, and presumably as the result of, tonsillar disease. The evidence, he thinks, clinical and experimental, tends to show that more and more connection is being established between the tonsillar cervical route and lung tuberculosis. Brown concludes with the statement: "In the study of portals of entry of disease into the human body, the pharyngeal and especially the faucial tonsils

have an importance not well enough recognized or understood, but increasingly appreciated in the light of each new clinical or experimental study." [F.W. P.]

MEDICAL RECORD.
JUNE 15, 1907.

1. STERN, H. *Auto-intoxication in its Medico-Legal Aspects.*
2. BOOTH, J. A. *Some Observations on the Treatment of Graves' Disease.*
3. PORTER, W. H. *Indicanuria, Its Etiology and Practical Significance.*
4. DENSLOW, L. N. *Locomotor Ataxia; a New Theory as to Its Cause.*
5. LEDERER, E. J. *The Milk Supply of Vienna.*
6. *ROBINSON, W. J. *Pilocarpin as an Adjuvant in the Treatment of Syphilis.*

6. Robinson advocates the use of pilocarpin as an adjuvant to mercury in cases in which the system has become saturated with mercury, and it has ceased to have the desired effect. The glands continue hard, swollen and tender, and stomatitis is marked. Gastro-intestinal, hepatic, renal and skin activity have been neglected. The pilocarpin causes the elimination of mercury that was stored up in the salivary glands and acting as a toxic body. In the bowels and kidneys the elimination has been too great for the organs and the pilocarpin causes the skin to act and carries the mercury to the seat of the skin lesions. The author recommends its use in doses of two to eight milligrams two or three times a day, without other drugs. It is of much value in secondary manifestations, and is a most remarkable glandular eliminant. In some cases supersaturation with mercury produces intolerance of the drug and the use of pilocarpin for a short time will enable us to resume mercury with excellent effect.

NEW YORK MEDICAL JOURNAL.
JUNE 15, 1907.

1. *DEAVER, J. B. *Traumatism as Etiological Factor in Appendicitis.*
2. FRIEDMAN, G. A. *Obstructive Jaundice in Chronic Pancreatitis with an Illustrative Case.*
3. ASHBURN, P. M., and CRAIG, C. F. *A Study of Tropical Diseases as They Occur in the Philippine Islands.*
4. BRADDOCK, C. S. *Some Notes on Bubonic Plague as Seen in Siam.*
5. BERGEY, D. H. *The Relation of Insects to the Dissemination of Disease.*
6. TOUSEY, S. *The X-Ray, Ultraviolet Ray and High Frequency Currents in Diagnosis and Therapy.*
7. BLAKETEL, H. S. *The Medical Man Afloat.*
8. SABEL, S. O., and SLATTERLEE, G. R. *Acute Lymphatic Leukemia Clinically Suggesting a Myelogenous Origin.*

1. Deaver does not consider it likely that trauma is ever the exciting cause of appendicitis in a previously normal appendix. He does believe, however, that in an appendix containing a latent abscess, or adherent to the peritoneum over the ilio-psoas muscle from previous inflammation, trauma may cause the lighting up of an acute process. There are 130 cases in the literature where this is supposed to have occurred. The mortality is high in such cases, largely because of the difficulty of diagnosis.
[F. W. P.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, No. 21.
MAY 23, 1907.

1. *ERB, W., JR. *Septic Diseases and Acute Leukemia.*
2. LEWANDOWSKY, M. *Sensory Irritation in Diseases of the Brain, Especially Chilly Feelings.*
3. HASEBROEK, K. *Gymnastics in Arteriosclerosis.*
4. SALTER, O. *The Traumatic Origin and Operative Treatment of Paralysis of the Serratus Magnus.*
5. ULLMANN. *A Cotton-Wool Plug in the Pus from Appendicitis.*
6. BÜTTNER, K. *Myoma in Pregnancy.*
7. GUTMANN, A. *External Eye Diseases and their Relation to Conditions in the Nose.* (Continued.)

1. Erb reports a case of acute lymphomatosis with a leukemic blood picture occurring in connection with a streptococcus sepsis. The autopsy showed an exquisite lymphomatous metaplasia of all the blood-forming organs. Streptococci were found in the blood and various glands just before death, their point of entrance being apparently necrotic tonsils. The blood picture was 2,250,000 reds, 26,700 whites, 45% hemoglobin. The white cells were made up of 91% of lymphocytes, the majority of which were large with faintly staining nuclei. The patient, a young man of twenty-eight, previously well, was sick only a little over one month, septic symptoms, fever and chills being first noticed. Erb does not agree with Türk that, in these cases, the sepsis is the primary infection, but thinks that until experimental proof is offered to show that a lymphomatosis can develop on the tissue changes produced by a previous septic infection, we must consider the leukemia as primary and the sepsis as a terminal infection. An interesting finding in this case was, that in a hemorrhagic area in a testicle, the nature of which, whether septic or a leukemic infiltration, could not be determined, the lymphoid cells in the interstitial tissue were phagocytic; it would seem that in acute leukemia the lymphoid cells acquired the faculty of phagocytosis, which is certainly not a function of normal lymphocytes.
[L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT, No. 20.
MAY 14, 1907.

1. *V. JAKSCH R. *Manganese Poisoning.*
2. TREUPEL, G. *The Present Status of Percussion of the Heart.* (Continued article.)
3. *GRASSMANN, K. *The Effect of Nicotin on the Circulatory System.*
4. *EICHELBERG, F. *The Treatment of Delirium Tremens.*
5. *SHIBAYAMA, G. *The Pathogenicity of the Mouse Typhoid Bacillus for Man.*
6. *UFFENHEIMER, A. *The Defences of the Body against Invasion by Bacteria through the Intestinal Wall.*
7. *SCHOENBORN, S. *Acute Cerebral Polyneuritis with Involvement of the Auditory Nerves.*
8. V. BURK. *A Case of Lysol Poisoning.*
9. *CLOETTA, M. *Digitoxin and Digalen.*
10. *CRÄMER. *The Effect of Nicotin, Coffee and Tea on the Digestion.* (Concluded.)

1. Report of four cases of chronic poisoning with manganese, occurring in the manufacture of permanganate of potash. The poisonous agent is supposed to be manganous oxide. The symptoms consist of paraplegia with peculiar spastic paretic gait, psychic changes and sometimes alimentary glycosuria. The course was tedious with slow improvement under general measures.

3. Grassmann reveiws the subject of the effect of nicotin on the heart and vessels. Most common is a cardiac neurosis, the "tobacco-heart." Nicotin injected into animals is capable of producing similar lesions of the arteries to those of adrenalin, and there is little doubt that the long continued excessive use of tobacco can produce arteriosclerosis in man. The best clinical proof of this is the fact that intermittent claudication, a disease in which arteriosclerosis plays an important part, is rare in non-smokers, while two thirds of Erb's cases used tobacco to excess. Experimentally, nicotin is known to cause contraction of the peripheral arteries and rise of blood pressure, and this if long continued would favor the production of sclerosis. Very important is the fact that tobacco may cause attacks identical in appearance with true angina pectoris, and this without the intervention of arteriosclerosis. The prognosis of such seizures, provided the use of tobacco be discontinued, is much better than in ordinary cases of angina.

4. Eichelberg gives mortality statistics of 1,574 cases of delirium tremens from the Hamburg-Eppendorf hospital. Excluding those with pneumonia, the death-rate was 2.4%. This very low mortality is attributed chiefly to the early use of cardiac stimulants in appropriate cases; indeed, Eichelberg advises now the use of digitalis from the beginning in all cases, a method by which Ganser in a large series has obtained a death-rate of .9%.

5. The bacilli of paratyphoid fever, of meat poisoning and of mouse typhoid are apparently identical. It has been claimed, however, that the last named is not pathogenic for man. Shibayama of Tokio brings evidence that this is not the case. In Japan pure cultures of mouse typhoid bacilli, mixed with meal, are extensively used to

exterminate mice, being given out by the government for that purpose. Shibayama reports four epidemics due to the accidental contamination of food with such mouse poison. An acute gastro-enteritis resulted like that of meat poisoning, and death occurred in several instances. The bacilli of mouse typhoid were recovered both from the food and from the stools of the victims.

6. Previous researches by Uffenheimer had shown that the intestinal tract of the newborn guinea pig differs from the other laboratory animals, in that it will not allow the passage through either of bacteria (the tubercle bacillus excepted) or of albumin. Further investigations by this author showed that this protection against bacteria was due to the much greater bactericidal power of the blood serum. This is due to an abundance of alexin or complement. In order to show that the protection against invasion was dependent on the presence of alexin, he experimented with adult rabbits whose alexin had been removed by a special method (anchoring of the alexin by injection of red corpuscles of the goat). Animals treated in this way and then receiving injections of bacteria by enema, showed after a few hours bacteria in all the viscera, whereas the organs of the control animals were sterile.

7. Report of a case of acute neuritis affecting the facial, both auditory, and the abducens nerves; recovery. The involvement of the cerebral nerves in neuritis is rare, in spite of the frequency of the peripheral form.

9. Polemic against Kiliani.

10. Digestion experiments by Crämer, carried out in test-tubes, showed that the addition of black coffee, tea, nicotin or extract from tobacco smoke to digestive mixtures seriously interfered with the action of pepsin. The patent nicotin-free cigars had, if anything, a more deleterious effect than ordinary cigars. The amounts added were calculated to correspond to a moderate use of the above drugs. An experiment on a very moderate smoker, showed that a single heavy cigar with each meal was enough to cause motor insufficiency of the stomach and a spastic condition of the intestine. Crämer's clinical statistics showed that the abuse of tea, coffee and tobacco was very frequently met with in various affections of the gastro-intestinal tract, especially in hyperacidity, impaired gastric motility, and spastic constipation. The abuse of alcohol was less frequent and apparently of less importance in the etiology of these affections.

[W. T.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 17. APRIL 29, 1907.

1. KAUSCH, W. *The Surgery of Cancer of the Stomach.* (Continued article.)
2. *BLOCH, A. *A Quick Method to Demonstrate Tubercle Bacilli in the Urine by Means of Animal Inoculation.*
3. GERLACH, V. *Does Cocoa Influence the Absorption of Nitrogen and Fat?*
4. BOERMA, N. *A New Forceps.*
5. *CARO. *A Case of Malignant Graves' Disease, Complicated with Pseudoleukemia.*
6. SACHS, H., and TERUUCHI, Y. *The Inactivation of the Complement by the Withdrawal of Salt.* (Continued.)

2. Bloch has devised a method by means of which tubercle bacilli in urinary sediments may be demonstrated by inoculation in the short time of nine days, instead of thirty to sixty days, the usual time of an inoculation experiment. The washed sediment is injected subcutaneously in the thigh of a guinea pig, and the corresponding glands in the groin are at the same time crushed with the fingers. After nine days, if tubercle bacilli were present in the sediment, they may be found in large numbers in the excised inguinal glands.

5. In Caro's case an acute Graves' disease ended fatally soon after excision of $\frac{7}{8}$ of the goiter, with hyperpyrexia and collapse. The urine shortly before death showed marked toxicity, the excised thyroid contained a very large proportion of iodine. There were present considerable enlargement of the liver and spleen, and of the cervical glands, with 60% of lymphocytes in the blood; these features are interpreted as a pseudoleukemic state induced by the acute intoxication with thyroid secretion.

[W. T.]

DEUTSCHE ZEITSCHRIFT FÜR CHIRURGIE, BAND 87, HEFT 4-6. APRIL, 1907.

15. *STORP. *The Feasibility of Extensive Resections of the Small Intestine.*
16. *NYROP, E. *Studies of the Results of Gastric Operations Performed on Cases with Benign Lesions Causing Stenosis.*
17. LORENZ, H. *A New Operation for Bilateral Hare-Lip.*
18. *JOSEPH, E. *A Study on Inflammation.*
19. *FEDERMANN. *Acute, Perforating Gastric Ulcer.*
20. HEUSNER. *Disinfection by Means of Iodine-Benzine Mixture.*
21. DRAUD, M. *Anomalies of the Urachus.*
22. *MARTINA, A. *Chronic Interstitial Pancreatitis.*
23. JÄCKH, A. *Retrograde Incarceration of the Intestine.*
24. BOHNE, A. *Two Cases of Injury of the Thoracic Duct.*
25. MEKUS, F. *Two Cases of Renal Tumor Occurring in Children.*
26. TAVEL. *The Technique of Operation for Retrobulbar Tumors.*
27. v. ARX, M. *Retrorectal Epigastric Hernia.*

15. Storp reports a case of a man twenty-one years of age from whom 510 cm. of small intestine were removed during the extraction of a spindle-celled sarcoma of the mesentery. An immediate end-to-end suture was done, following which the patient made an uninterrupted recovery. On several occasions tannigen or opium was necessary to correct a tendency to diarrhea. In four weeks the patient had gained four kilos in weight and digested ordinary diet without difficulty. The bowels moved normally once or twice a day. About two months later, however, pain and a tumor mass were again present, the condition being such that further operation was impossible. Twenty-two cases from the literature are tabulated, all illustrating the point that very long pieces of small gut may be removed without much disturbance of digestive functions. The longest resection reported is that of Nigrisoli, in which 520 cm. were removed, following which the patient gained 5.1 kilos in twenty-three days.

16. Nyrop reports fifty-four cases of gastro-enterostomy with an operative mortality of 3.7%. He then discusses in detail the causes which make a gastro-enterostomy unsuccessful, quoting freely from the literature, and giving in each instance the best recognized method of avoiding such causes. They are to be divided as follows:

A. Post-operative causes:
   1. Peptic ulcer of the jejunum.
   2. Spontaneous gastropexy.
   3. Secondary narrowing of the anastomosis.
   4. Chronic volvulus of the coils of small intestine.
   5. Diarrhea.
   6. Entrance of bile or pancreatic secretion into the stomach.
   7. Peritonitis.
   8. Hemorrhage from the wound.

B. Pre-operative causes:
   1. Poor general condition of the patient.
   2. Too great atony and dilatation of the stomach.

Nyrop insists that these last two factors are practically always the cause of the so-called "vicious circle," and that the technique of making the anastomosis is not responsible for its occurrence.

18. According to Joseph, who writes from the clinic of Professor Bier, the process of inflammation depends on two factors: (1) A harmful agent (bacteria, toxins, etc.), and (2) a blood capable of destroying this agent. If either of these factors changes, inflammatory phenomena disappear. If the infectious material is removed there is no longer inflammation; if the patient becomes pyemic, his blood, having lost the power of destroying these bodies (bacteriolysis, etc.), even a large amount of infectious material will not call forth inflammation. These same rules apply to stasis hyperemia. On the arm of a pyemic person, or when the infecting agent has been removed, the bandage causes only a purely static edema, a change in the blood content such as is seen when the normal limb is constricted. There is absent that peculiar reaction of the blood, due to capillary hyperemia, which Lexer calls an "erysipelatous redness," and which is to be considered a gratifying phenomenon, since it means that the blood is capable of destroying infectious material. By experiments Joseph has shown that

this capillary hyperemia is capable of removing much infectious material from the general circulation. The result to be most desired after the application of a stasis bandage is, therefore, an intense redness reaching up to the point of constriction, and only partially disappearing during the intervals when the bandage is loosened and the extremity elevated.

19. Federmann reports sixteen cases of perforated gastric ulcer. Five were moribund and no operation was done. Of the remaining eleven four were cured by operation. Of the seven post-operative deaths, three died of secondary abscesses; four of spreading peritonitis. Emphasis is laid on the fact that many of these cases through faulty or slow diagnosis reached the surgeon so late that his efforts were of no avail.

22. Martina reports the case of a woman of thirty-three years who had suffered for four years with what she considered stomach trouble. The disease began as a sudden severe pain in the region of the stomach, a little to the left of the middle line, occurring in the eighth month of her first pregnancy. There was no vomiting. The pain ceased after the birth of the child and did not recur for a year. There was no trouble with appetite or digestion at this time. With the occurrence of the second pregnancy the pain returned, and following this time increased in severity, being of a heavy, boring character. It was much less severe during the time when the stomach was empty, increasing quickly after eating. Gradually the diet became reduced to about one half liter of boiled milk per day; the weight was 15 kilos below normal. She had twice been treated for gastric ulcer without benefit. At operation the pancreas was found enlarged, of unusually firm consistency and with a nodular surface. The peritoneum covering the body and tail of the organ was split for a distance of 10 cm. The abdomen was closed with drainage. Convalescence was uneventful and when seen 2¾ years afterwards the patient was in perfect health without any digestive disturbances. [W. C. Q.]

Miscellany.

A TEMPERANCE BUREAU.

A SOCIETY has been formed in Boston, Mass., called the Scientific Temperance Federation, organized and incorporated by the laws of the state with power to hold real estate and receive donations and legacies. The purpose of this society is to collect and keep on file all books, papers, pamphlets, studies and data, concerning the physiological, chemical, psychological, social and economic relations of alcohol and narcotics and the allied evils which follow. Also to accumulate literature on insanity, crime, race degeneration and associated topics. This literature is to be filed, catalogued and placed where it can be made accessible to persons who wish to study it. The object is to form a great central bureau for the collection and dissemination of exact facts from the entire literature of the world, so that physicians, authors and writers may be able with little expense to go over the entire field of research on these topics. Its aim is also to enable every writer, specialist and original worker to have his conclusions put on file where they can be studied and examined and become of more practical service. A trained assistant will furnish abstracts and copies, and other data of all the literature on file and thus enable the student to determine what has been written. A membership fee will be charged, which will entitle one to abstracts, data and copies of future publication. Others not members will be charged research fees for copies and abstracts that may be called for. This society was organized in December, 1906, and already it has secured a very large collection of pamphlets and papers. This is an independent organization, with a distinct purpose of gathering facts on all sides of the question, and appeals to every student as a most practical agency for the dissemination of the exact facts. Hon. W. C. Lilley, of Pittsburg, Pa., is president, and T. D. Crothers, M.D., of Hartford, Conn., is chairman of the board of directors. Inquiries should be addressed to Miss C. F. Stoddard, 23 Trull St., Boston, Mass.

DR. WILLIAM K. OTIS.

AT the Annual Meeting of the American Urological Association, the following resolutions were adopted upon the death of Dr. Otis:

Whereas, in the death of Dr. William K. Otis, the American Urological Association has lost one of its founders and former officers, and a member whose genial personality made him beloved of all, and whose scientific attainments had placed him in the front ranks of his profession, therefore be it

Resolved: That this Association expresses its profound regret at the loss of so esteemed and valued a member and friend; and be it furthermore

Resolved: That these resolutions be spread upon the minutes of the Association, that a copy thereof be transmitted to the family of the deceased and that a further copy thereof be furnished the medical press for publication.

Signed:
FREDERIC BIERHOFF,
ORVILLE HORWITZ,
DESANTOS SAXE.

Correspondence.

ARABIAN SCIENCE.

ROXBURY, MASS., June 29, 1907.

Mr. Editor: I observe that Professor Osler, of Oxford, says, in a recent discourse, that the physicians of the Arabian school made no solid contributions to anatomy or physiology (JOURNAL, June 27, 1907). This is undoubtedly true, yet they made valuable contributions to science. Geber, eighth century, discovered arsenious acid and corrosive sublimate. Albucasis, twelfth century, discovered alcohol and the art of distillation. Alhazan, of Cairo, eleventh century, wrote a valuable treatise on optics and described the properties of lenses. Rhazes, of Bagdad, tenth century, gave the first accurate description of smallpox; Avicenna, eleventh century, of malignant pustule; Avenzoar, of Seville, twelfth century, of the itch. We owe to the Arabians the methodic use of opium as a remedy, which, though used by Dioscorides and some of the Grecians to a certain extent, was apparently unknown to the Galenists. They also used mercury, which was first made known to the Europeans as a medicine by the Moors and Saracens, was adopted by Guy de Chauliac and Paracelsus and formed the chief ingredient of the prescription sold by Barbarossa, the corsair of Mitylene, to Francis I to cure his pocks. We cannot date a letter without the Arabic numerals, or compound a salt without an "alkali," a purely Arabic word. Altogether we owe a good deal to the Arabians, which we ought not wholly to forget.

Yours respectfully,
EDWD. T. WILLIAMS, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 29, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,364	468	Quincy	6	2
Chicago	—	—	Waltham	11	1
Philadelphia	—	—	Pittsfield	10	2
St. Louis	—	—	Gloucester	5	2
Baltimore	173	42	Brookline	6	1
Cleveland	—	—	North Adams	7	2
Buffalo	—	9	Chicopee	7	5
Pittsburg	—	—	Northampton	4	1
Cincinnati	—	—	Medford	3	1
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	2	1
Providence	74	23	Hyde Park	4	1
Boston	214	66	Melrose	2	1
Worcester	37	9	Newburyport	—	—
Fall River	40	12	Woburn	5	1
Cambridge	12	1	Marlboro	5	1
Lowell	36	14	Westfield	—	—
Lynn	15	3	Peabody	—	—
New Bedford	26	11	Revere	5	3
Springfield	28	4	Attleboro	3	0
Lawrence	25	—	Clinton	2	1
Somerville	18	3	Adams	6	1
Holyoke	19	9	Gardner	—	—
Brockton	11	3	Milford	—	—
Malden	11	4	Watertown	3	2
Chelsea	12	3	Plymouth	—	—
Salem	12	2	Weymouth	4	0
Newton	6	—	Framingham	2	1
Haverhill	6	—	Southbridge	10	1
Fitchburg	—	—	Wakefield	—	—
Everett	5	3	Webster	—	—
Taunton	14	2			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JUNE 26, 1907.

GASSAWAY, JAMES M., surgeon. Granted leave of absence for twelve days from June 24, 1907. June 21, 1907.

WHITE, J. H., surgeon. Granted leave of absence for seven days from June 8, 1907.

BILLINGS, W. C., passed assistant surgeon. Granted leave of absence for three days from June 27, 1907. June 25, 1907.

STIMSON, A. M., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

RUCKER, W. C., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

WARD, W. K., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

TRASK, J. W., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

ROBERTSON, H. MCG., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

STILES, CH. W., Chief, Division Hygienic Laboratory. Directed to visit the States of North Carolina, South Carolina, Georgia, Alabama, Mississippi, for special temporary duty; upon completion of which to rejoin his station. June 22, 1907.

GLEASON, C. M., acting assistant surgeon. Granted leave of absence for twelve days from June 18, 1907. June 20, 1907.

KNOWLES, RALPH, acting assistant surgeon. Granted leave of absence for seventeen days from July 7, 1907. June 21, 1907.

RODMAN, J. C., acting assistant surgeon. Granted leave of absence for three days from June 16, 1907. June 21, 1907.

ROWLES, J. A., acting assistant surgeon. Granted leave of absence for ten days from July 15, 1907. June 19, 1907.

WALKER, R. T., acting assistant surgeon. Granted leave of absence for ten days from July 8, 1907. June 21, 1907.

WETMORE, W. O., acting assistant surgeon. Granted leave of absence for eight days, on account of sickness, from June 6, 1907. June 20, 1907.

WILSON, J. G., acting assistant surgeon. Granted leave of absence for seventeen days from July 21, 1907. June 19, 1907.

O'GORMAN, T. V., pharmacist. Relieved from duty at Memphis, Tenn., and directed to proceed to Ellis Island, New York, reporting to the Chief Medical Officer for duty and assignment to quarters. June 25, 1907.

MCBRIDE, C. R., pharmacist. Relieved from duty at Cebu, P. I., and directed to return to the States, reporting arrival at New York. June 24, 1907.

BARNETT, E. E., pharmacist. Directed to proceed to Evansville, Ind., and report to the Medical Officer in Command for duty and assignment to quarters. June 22, 1907.

SHERER, J. M., pharmacist. Directed to proceed to Memphis, Tenn., reporting to the Medical Officer in Command for duty and assignment to quarters. June 22, 1907.

APPOINTMENTS.

E. E. BARNETT and J. M. SHERER appointed pharmacists of the third class, June 21, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 6, 1907.

A. C. H. RUSSEL, surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, July 15, and granted sick leave for three months.

O. D. NORTON, surgeon. Detached from the "Missouri" and ordered to the Marine Recruiting Station, New York, N. Y., and to additional duty in attendance upon officers and men of the Navy and Marine Corps in New York City not otherwise provided with medical attendance.

O. DIEHL, surgeon. Ordered to the "Lancaster."

E. J. GROW, surgeon. Detached from the Marine Recruiting Station, New York, N. Y., and ordered to the Naval Hospital, Navy Yard, Washington, D. C.

R. SPEAR, surgeon. To the Navy Yard, League Island, Pa.

L. W. SPRATLING, surgeon. Detached from the Navy Yard, League Island, Pa., ordered to the "Missouri."

M. E. ROSE, H. A. GARRISON, J. T. MILLER, G. B. TRIBLE, O. V. HUFFMAN, assistant surgeons. Appointed assistant surgeons from June 27, 1907.

C. W. O. BUNKER, acting assistant surgeon. Appointed from June 29, 1907.

RESIGNATION.

DR. WALTER F. PARKER, Professor of Ophthalmology in the University of Michigan, has resigned. His successor has not yet been selected.

RECENT DEATHS.

DR. ALBERT W. FORD, of Brooklyn, N. Y., died from cerebral apoplexy on July 2. He was of Virginia parentage, but was born, in 1853, at Augusta, Me., where the family was temporarily located. He was graduated in arts from the University of Virginia and in medicine from the University of the City of New York, and had always practiced in Brooklyn. In 1886 he was appointed a police surgeon, a position which he retained up to the time of his death, and he was one of the most popular men connected with the Police Department. He was also for a number of years surgeon of the Sixty-ninth Regiment, New York National Guard.

DR. JOHN H. OTIS, one of the most promising young physicians of Poughkeepsie, died from cardiac disease on June 30, at the age of thirty-six years. He was the son of Dr. John C. Otis, with whom he was engaged in practice. He was especially interested in pediatrics, and at the time of his death was Commissioner of Charities of the City of Poughkeepsie.

BOOKS AND PAMPHLETS RECEIVED.

A Text-Book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc. Twelfth edition, enlarged, thoroughly revised and largely re-written. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Modern Medicine, Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., assisted by Thomas McCrae, M.D. Vol. II. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Addresses.

THE SCIENCE AND ART OF MEDICINE IN SOME OF THEIR ASPECTS.*

BY FREDERICK C. SHATTUCK, M.D., BOSTON,
Jackson Professor of Clinical Medicine, Harvard Medical School.

MEDICINE is truly a science in that it rests upon the foundation of facts ascertained or ascertainable. It is true that the fact of to-day may not be a fact to-morrow. Were this, however, sufficient warrant for denying the term science to any branch of knowledge, whose withers would be unwrung? Whatever the discovery of radium may have brought, it has not brought peace of mind to the physicists and chemists. Medical science has grown marvelously of late in spite of the complexity of the subjects involved and of the inherent difficulties which they offer to direct investigation. The more we know, the more we find we don't know. Science thus changes, and every great advance in knowledge is liable to require new hypotheses and theories, which in turn prepare the way for the next advance. The medical knowledge of the public — or laity — is always that of the profession x years ago. We are ourselves responsible for the belief that pneumonia and pleurisy are due to exposure to cold; that uric acid is the cause of dire evils, including rheumatism.

The practice of medicine is the application of known facts and principles to disease. In preventive, the higher branch of medicine, this application is close. We acquire the power effectually to prevent malaria and yellow fever only when we learn how they are carried, though this knowledge has in no way helped us in the treatment of the individual cases. The same is true of typhoid fever. In the care or cure of diphtheria, on the other hand, science has enormously strengthened our hands, and we have confident reason to hope for similar aid in other infections. The surgeon's knife is in reality a confession of failure in so far as it is used for the relief of pathological surgery. Accident surgery can be abolished only by abolishing the activity, the life of man; but there seems no reason to despair of finding out how to prevent cancers and other new growths.

Those of us who are engaged in what is ordinarily termed the practice of medicine, that is, in dealing mainly with individual cases of disease, find that there is a gap between science and the concrete case. This gap is of varying width, here and there may be easily jumped, but must usually be bridged by the art of medicine. The practitioner of medicine soon learns that disease is one thing, the person diseased another. He finds, indeed, that in very many persons demanding his services there is no disease in the sense which this word has come to convey, no definite and appreciable change in structure. Dis-ease, discomfort there is, due to impaired or disordered function, behind which may be a more or less obviously faulty mode of life, a false attitude toward life, or a mental or moral maladjustment to surroundings. The practitioner learns that human nature is essentially the same everywhere and in all times; that it does not change as does the science with which he strives to cure or alleviate the ills of men. Osler tells us that in the last analysis man has but two paramount desires: to get and to beget. The desire to get, however, is of wide extension, and as civilization advances is becoming ever wider, ranging from necessary food and protection against weather to automobiles and flying machines. But while it is true that human nature in its main features is unchanging, it is also clearly true, and vital for the practitioner to realize, that no two individuals are precisely alike in bodily and mental make-up and in environment. Each person is a kaleidoscopic figure, never exactly reproduced. Bertillon, whose name is perhaps most widely known through the application of his system of measurements to the identification of criminals, has shown that there is no duplication of size and proportion combined of that simple part of man's structure, his bony framework. Take a sufficient number of accurate measurements and you can pick your man from a multitude. Each person again has his own combination of lines on the palmar surface of his finger-tips and hands. If there is such infinite variation in the simple, is it not reasonable to suppose it to exist in the complex, in internal organs and their balance, above all in the ganglionic nervous system which should ensure the harmonious working together of the various organs and other systems? As regards the brain, indeed, there can be no question, so open to observation are its workings and so great is its capacity for education.

It is thus clear that our work is not mathematical, nor is there any danger of its becoming a penny-in-the-slot business, certainly within a future which can be of other than speculative interest to any of us here present. Science has its pure devotees — biologists, physiologists, pathologists. The art of medicine also has its pure devotees, the quacks. I assume that very few of you here present aim at the former, none at the latter. And yet there are quacks within and on the outskirts of the profession, the worst ones, for they have known light and have deliberately chosen darkness. I have known highly trained men who have gone as far professionally wrong as a man can go, bartering their birthright for a mess of pottage.

Most of you, doubtless, look forward to being practitioners. For four years now you have devoted yourselves mainly to the science of medicine, to its fundamental facts and principles, and to the methods which we employ in trying to solve the riddles of disease. Much that you have learned you will have to unlearn. How brief is the life of a textbook on the practice of medicine! Many books which well served their day and were constantly in the hands of the progressive practitioner now gather dust on the shelves of libraries. Here and there one, Watson's

*Address before the graduating class in medicine of the Medical Department of Yale University, June 24, 1907.

"Practice," for instance, has an occasional reader attracted by its style. We think we are too busy to read an old book, but when we do so, we find that the masters knew their art, though the young student of to-day knows more science. He who reads, marks, learns and inwardly digests the chapter on dyspepsia in Austin Flint's "Practice of Medicine," to take a random illustration, will be more successful in his treatment than the man who relies alone on the latest monographs on diseases of the stomach and guides his therapy overmuch by the stomach tube and chemistry.

You will now begin to apply your science, that is, combine science and art, with direct responsibility — that great teacher — all the time keeping abreast with the advance in science, entering the post-graduate school which claims you as long as life lasts.

The art of medicine is not easy to teach directly. Something of it you learn more or less unconsciously in watching your clinical teachers and their handling of cases, something negative perhaps as well as positive, something to avoid as well as to imitate. If difficult to teach there is much to learn, and it may be that thirty-odd years of practice and nearly thirty years trying to teach medical students give some warrant for offering you a few hints of possible use.

Success in the practice of medicine lies in a happy marriage between science and art. It is as sure as success in any other calling, though there are no great money prizes. He who gauges his success in life by the amount of money he makes had better resign medicine to those who seek happiness and a reasonable support in the exercise of their faculties in a calling which is ever growing, is of prime service to man and gives a chance for unlimited self-development. It means hard work, but you remember that Sir Andrew Clark defined work as the life of life.

The elements of success seem to me somewhat as follows:

1. Of course you must know your business, possess a reasonable knowledge of your profession as a science. This, with due diligence in its exercise, the law demands. The defendant in a malpractice suit is not expected to know all there is to be known on the subject. Indeed, that wise physician, Dr. James Jackson, said sixty years ago that there was at that time more known about medicine than the mind of any one man could grasp. What would he say to-day? The adjective reasonable is elastic, and must be well stretched from the legal limit to satisfy the demands of conscience and to attain real success.

2. Thoroughness. Form the habit of it from the start and deal with each case which comes to you as if it were the only case in the world. Never forget that mistakes come far more from not looking than from not knowing, from taking things for granted. Collect all your facts. For failure to do this there is no excuse. All can do it.

The evidence which leads to diagnosis and treatment is of two classes: the objective, which you gather for yourself through observation and physical examination; and the subjective, which you elicit by questioning the patient. Of the two, the former is by far the more valuable and can never be dispensed with. But we need the latter and must then often call in the aid of time before we can reach a definite conclusion. Sometimes patients get well without our really knowing what was the matter with them. Sometimes the autopsy fails to clear up the mystery. I wonder whether we are as keen observers as were our forbears who had no instruments of precision to rely on, who knew nothing of germs and their ways.

There are cases in which time is saved by making the physical examination before taking the history, though I am inclined to think this order safer for the experienced than for the younger practitioner. If there be very definite organic disease, it does not, as a rule, escape searching exploration. And yet we elders have all seen cases enough which we would pass as good risks for life insurance if we relied on the objective evidence alone. Perhaps angina pectoris affords as good an illustration as any. The heart, arteries and kidneys may seem perfectly sound, while the age of the patient and his symptoms reveal coronary change which may indeed soon prove fatal in spite of the best care, which under mismanagement is likely to prove very serious, but which so often is amenable to wise counsel persistently and faithfully followed out. The sequence and development of the symptoms, their mode of onset, may be essential to the determination of their exact pathological nature, the sudden or slow advent of paralysis, for instance. The seat of a lesion may be revealed by physical examination alone, while the nature of a lesion can only be determined by the history. Even when physical examination fully lays bare the disease, it may tell us little as to the subject of the disease, and our advice must be given to the individual, not to the average man.

In history taking there is a chance for the exercise of much art. The way in which a person tells his story in itself teaches you much about his case. The talk of some people, not always females, like the brook runs on forever, though, unlike it, gets nowhere. Others seem unable to give a direct answer to a direct question. Important facts may be forgotten, may be suppressed. Some are so foolish as to deliberately deceive, or attempt to deceive, their doctor. There are cases in which it is best to let the patient tell his story in his own way; others in which question and answer should be resorted to, either from the start or later. Just remember that people generally care little how you collect your facts. They want to help you to help them, and are ready to accept your methods, especially if tactfully applied.

It is interesting to recall that the prototype of Sherlock Holmes was Mr. Bell of Edinburgh, one of Conan Doyle's surgical teachers. The power of observation is capable of great training. Don't think thoroughness a waste of time. You will find that gradually you work quicker, though

no less surely, lower centers learning how to do that which at first only the higher could perform.

3. Common sense may for our purpose be defined as the power to arrange all the facts with an eye to perspective, with a sense of " values " which puts into the foreground those facts which are essential, properly groups those which are secondary and rejects those which are irrelevant to the case in hand. It includes the power to see what is possible and practicable in any given case. The ideal is rarely attainable and we too often have to be contented with as close an approximation as may be possible. Perhaps common sense may be made to include the power of logical reasoning. Here there may be excuse for failure such as there is not for lack of thoroughness. Clear vision and an orderly mind are not given to all in the same degree, but I am sure that they are cultivable and the problem for each of us is to make the most of himself.

4. Character, though hard to define, is very real and a very important factor in successful practice. Character is elevated by the formation of high ideals and strengthened by the resolute pursuit of them, the surmounting of obstacles internal and external. Character seems to be sometimes latent and comes out only under a squeezing process which may prove to be of incalculable benefit although painful at the time. Character will invariably reveal itself. Do not be studied or self-conscious. Do not ask yourself, " What effect am I producing? " A man should be himself, eradicating and restraining his bad, cultivating his good qualities. Do your work the very best way you know how and the result is sure to follow. The character of the physician has much to do with the obedience of the patient and with putting him into the frame of mind which leads to co-operation.

5. Enthusiasm and a genuine love for his profession, apart from its emoluments, is a quality of great value to the physician. In no other calling is there greater justification for enthusiasm. It is our privilege to try to promote the well-being of man, and we cannot do our best and highest work unless we are ever mindful of the relation of mental and moral states to ills either arising in the body or outwardly manifested by it. A love for your work will support you in discouragements of all kinds which in greater or less measure must come to all of us in life. Drudgery cannot be escaped in any calling. It is part of life, but there is no drudgery in any way comparable to that endured by the man whose sole aim is to amuse himself.

I remember hearing one of my teachers in college days, who might then with profit to all concerned have availed himself of the Carnegie Pension Fund had it existed at the time, remarking in the course of a lecture, " Gentlemen, you may think what you will, but you will find that whatever you do in life it will come down to turning the crank." God help the man of medicine, and still more his patient, who believes or gets to believing this to be true.

6. Next may come sympathy. The power of putting yourself in another's place and of realizing how he feels under given circumstances. Try to catch his point of view. If you cannot do this, act on what you think would be your own in the same situation, remembering all the time that his and yours are not necessarily the same. One personal lesson on this point is so deeply stamped on my memory that I trust you will pardon its mention. I had been seeing daily in consultation a gentleman who had special reasons for wanting to get well. He seemed on the road to recovery, and, while returning to the station with his doctor, I suggested that it might be well to skip a day, that the moral effect of so doing might be good, the fact of omitting a visit strengthening our assertion that we thought him doing well. My colleague assented. About bedtime that night I got a telegram, " Mr. A. wishes you to come down as usual to-morrow." When the doctor met me the next day he reminded me of our conversation of the previous day and of my using the words " moral effect." He then went on to state that when he told Mr. A. that no consultation would be held the next day, the patient remarked, " I think he had better come — for the moral effect! "

A uniformly kind manner, especially if it be based on kindness of heart, counts for much. Abernethy's success did not depend on his brutality. I like to recall the saying of an old French physician with whom I was visiting at the Hotel Dieu at Lyons,— " *Le Médicin guérit rarement, il améliore souvent, il console toujours.*"

Cheerfulness in the physician is a good tonic to the patient. Our fears are for ourselves and for a judicious friend or member of the family, if haply such there be. Unreasonableness on the part of a sick person is not to be regarded as it might be were he well. Illness throws some of us off our balance; but the lessons in fine courage, constancy, unselfishness, which we may all learn from our patients, are far from infrequent. The juice of character flows under the press of adversity.

Remember that the doctor's visit should be the main incident of the day to the sick man and try to make it as near the same or expected hour as you can consistently with other duties.

Once again, do not confound the sick man and his disease. Laborious days and broken nights are compensated in part by the fact that no one gets so close to the real man as the doctor. The lawyer gets closer to his money, which some may value more than themselves. The clergyman may be liable to get closer to the would-be than to the real self, to the John's John rather than to the real John, as the wholly delightful " Autocrat of the Breakfast Table " puts it. The doctor sees plenty of evil, more weakness, but still more of good in human nature. While the head must rule the heart, the latter cannot go untouched.

7. Honesty of mind is not, it seems to me, quite the same thing as common sense. Its essential feature is the power of seeing things just as they are without being blinded by either prejudice or personal interest. In the higher

degrees it is given to few. It is to be sharply differentiated from honesty of act, though when the two honesties are combined, they are precious alike to the owner and his circle, be it large or small. The man with an honest mind may act dishonestly, with wide-open eyes doing that which he knows to be wrong. His vision is clear, but his character or standard is low. On the other hand, the man of dishonest mind may act honestly and be governed by only the highest and most unselfish motives. The muddle-headed good man can do great harm and may even bring goodness into disrepute.

We can perhaps as well here as anywhere touch on the devotee of pure art in medicine — the quack, who certainly scores his successes and thus becomes worthy of analysis.

Is not the essence of quackery the claiming to possess power or knowledge which the claimant knows he does not possess? Thus dishonesty is inherent and implied. The visionary, the fanatic, the ignorant man, has deceived himself before he deceives others. He is a crank rather than a quack. But he may be both, in that he may gradually have come from clear to troubled vision, to self-deceit, a thing against which we must every one of us be constantly on our guard, so largely does the *ego* enter into our composition. The quack generally knows his human nature and the salient fact in medicine that the tendency of most pathological processes is toward recovery. He is a past master in the use of suggestion, through which the mind influences the body, the vital element in much drug action and in all forms of irregular healing. He does not hesitate to promise results which we, handicapped by a knowledge of our ignorance and by conscience, often cannot do. We are expected to cure to a degree that he is not. It therefore often happens that it is our failures, his successsses, which are spread abroad. Those who have resorted to him and have failed to get the promised relief are generally ashamed of their foolishness and keep quiet. Our failures, mistakes, or supposed mistakes, on the other hand, become the common property of the sewing circle, and may travel far by the most up-to-date means of communication. The way of the fashionable practitioner, whether he transgress or not, is not always easy.

The doctor is judged by a more or less incompetent tribunal, the proportion of people who know what constitutes evidence in a question of physical science being small. There are not as many " born doctors " as there used to be, and the seventh son of the seventh son makes less noise in the land, though his trumpet is still audible. Let us not be distressed by seeing the quack flourish near us, even if it be as the green bay tree. He, like the dog, has his day, usually a relatively short one. Neither should we let our minds be troubled by criticism, however undeserved, provided that we have the approval of our own consciences. Let us never forget that we receive far more credit which we do not deserve than we do discredit. Let us take the lean with the fat without grimace. We can recall the saying attributed to Mr. Lincoln about fooling all the people all the time. I say attributed, because an earnest searcher told me the other day that he had been unable to find the saying anywhere in Mr. Lincoln's writings or to find out when and where it was said.

With the above qualities kept constantly under cultivation, good health and good habits, you are bound to succeed sooner or later, more or less rapidly. Your lives of useful service will be happy and the ranks of those who beg their bread have very few recruits from the children of the righteous professional man.

The essential aims of undergraduate medical teaching seem to me only three: first, to teach the fundamental facts, the doing which must open before you more or less clearly the lines of future progress; second, the methods to be employed in the study and recognition of disease; third, thoroughness in work. Between the latter and the Yale spirit there is, I have reason to believe, a peculiarly close sympathy. Thoroughness is a close link between the science and the art of medicine, which latter may be summed up in the observance of the Golden Rule. Thoroughness, too, is a prophylactic against routine, the favorite child of sloth. Rules are made to break. They are our servants and should never be allowed to become our masters. We make rules to save thought, the hardest work there is. We must think whether and how far the rule applies to the given case, and let us not hesitate to break it for cause.

There are other points I would fain touch on, but I will be merciful.

A sermon, from which these remarks are not wholly devoid of resemblance, never used to be complete without a lastly and a finally. Under lastly a few words on a point of ethics as applied to the practice of medicine: Are we ever justified in deceiving or lying to our patient? My answer to that question is an unhesitating " yes," *but* — that little though significant word forces itself forward — only under conditions. Before stating my view of them let me ask anew the question of Pilate, " What is truth? " In matters medical we are dealing with x, y and z, and we must never forget that our opinion does not necessarily represent the truth. The truth as we see it may not be the truth itself. In telling the truth as the truth, we should be very sure that it is the truth, especially if in so doing we condemn the patient to an incurable and painful malady. There is generally a near friend or relative to whom we can speak frankly if we like, expressing our fears, from which we should not be too ready to take counsel. But, apart from our liability to error, it seems to me that every practitioner now and then meets a case in which neither silence nor skillful evasion avail, and in which telling the truth is sheer cruelty. The cases are not common in which a categorical lie is justified or necessary, but there are cases in which the question, " Have I a cancer? " should, in my opinion, be answered by a firm " No." There are, again, cases where the knowledge of a lues would break up a family and

wreck the happiness of the innocent without doing them any good. There would be no difficulty in multiplying illustrations. Doubtless, ordinarily, the truth, which may be stated with brutal frankness or with delicate consideration, is best for all concerned, especially if it be served with the saving grace of " as I see it," or its equivalent.

Now for the condition or touchstone. Before swerving from or denying the truth we should ask ourselves the searching question, " For whose advantage is this denial? " If it is in any measure for our advantage, or seeming advantage, let us shame the devil. Only when in our deliberate judgment the interest of the patient and his family, and that alone, is thereby furthered is the truth to be denied.

Finally, allow me, my younger brothers in the profession, to wish you God-speed and the attainment of your hearts' desire.

MEDICAL TEACHING AT HARVARD AND THE OPPORTUNITY IT OFFERS THE YOUNG GRADUATE FOR MEDICAL TRAINING.*

BY HENRY A. CHRISTIAN, M.D.,
Assistant Professor of the Theory and Practice of Physic, Harvard University, and Physician-in-Chief, Carney Hospital, Boston.

Mr. Chairman and members of the Alumni Association of the Harvard Medical School: It was with particular pleasure that I received your invitation to talk to you to-day of the teaching of medicine in Harvard and the opportunity for training it affords the recent graduate in medicine. Not being a graduate of the Harvard Medical School myself, perhaps I can discuss the teaching of medicine in Harvard from a slightly different view point from that of the man trained here. At least, the perspective of the man born and trained in Virginia and Maryland is apt to be different from that of the New Englander when each turns his gaze on the same things, and so I will not be supposed to see things just as you do. However, when we differ, I trust it will be on the friendly basis of mutual interest in the Medical School and that a consideration of these differences will emphasize what is best for that common interest.

Seven years ago I came to Boston with very different ideas of the Harvard Medical School from those I now hold. I expected to find the settled method which had grown hoary with years and the complacency of long precedent. Instead I found the restlessness of experiment in teaching methods. Six years ago the degree requirement for admission was inaugurated, and in the autumn of 1905 the fourth-year elective system was begun. These two changes alone are sufficient evidence of a desire to improve conditions, but in addition many minor changes have been made, so that the teaching in the school must have changed much since the days when most of you were students.

With the establishment of the fourth-year electives, a number of changes were made in both departments of medicine and it is of these that I desire in the first place to tell you. Through the courtesy of the trustees and superintendent of the Massachusetts General Hospital the Department of Theory and Practice has been able to offer to 28 members of each fourth-year class an elective, in which four men spend their entire time in the wards and laboratory of that hospital in intimate contact with the patients and machinery of a great hospital and under the constant supervision of one man whose hospital obligations are *nil* and whose teaching function is paramount. There each man sees the daily progress of disease in some forty patients. Each student obtains the history of assigned cases, makes physical examinations and watches the patients from day to day. Work in the wards is supplemented by laboratory investigation, such as is possible in a well-equipped clinical laboratory. All student observations are subjected to the control of instructor and house records. The ward visit of the visiting physician is followed by all four students and instructor, and in this way all patients on one service are observed. All postmortems are attended and in many instances have been done by the students themselves. The case seen on the medical side, if transferred to the surgical, is followed by the student in charge and, as a rule, all see the operation. Autopsy and operation serve to confirm or disprove for them diagnosis in a way far more instructive to the given student than is possible in any other way. It is the continued contact of student with patient that has been the most valuable feature of this course, and one of hardly less importance has been a sufficiency of time for careful observation and record, such as is impossible in the outpatient department. This elective will be supplemented next term by an additional month, increasing the number of Theory and Practice students at the Massachusetts General Hospital to 32, and the department will offer a second elective of similar character at the Carney Hospital to 16 men; four men every forenoon during two months.

A third elective was offered last year by Theory and Practice and will be continued this year, in which an opportunity is given a limited number of senior students during the first half year of carrying on clinical laboratory investigation. Last year two creditable pieces of work were published from this course.

The Department of Clinical Medicine conducts its work in a different way. It does not limit the number electing the course. The students are distributed in the out-patient medical clinics of the Massachusetts General and Boston City hospitals during the forenoon as regular student assistants to aid in running the clinics. There they see and treat ambulatory cases. Last year this work was greatly enhanced in value by the presence at each hospital of an assistant in clinical medicine, whose only duty was to supervise the students in their work. The regular management of the clinic devolved on the visiting phy-

*An address at the annual meeting of the Harvard Medical School Alumni Association, held in Boston June 25, 1907.

sician on duty, assisted by the students, and the teaching was directed independently of the management of the clinic. The experience of the previous year had shown that it was not possible for one man satisfactorily both to teach and to run the out-patient clinic.

The afternoon is spent by these men in part in ward work at the Massachusetts General Hospital, under the direction of an instructor, and in part in preparing a thesis or attending certain laboratory demonstrations. A ward visit with Dr. Shattuck is included in the week's program. One of the best afternoon exercises comes on Fridays, at 4.15, when the histories of cases which have been autopsied during the week are read and discussed. After this the post-mortem findings are reported and specimens demonstrated. Lastly, any discrepancies in diagnosis are discussed and post-mortem findings harmonized as far as possible with ante-mortem observations.

Finally, last year a new feature was introduced in the medical department, a clinical laboratory course given under the supervision of the department of Theory and Practice, which replaces portions of instruction formerly given by several departments. This course occupies two hours a day of the second half of the second year, and includes systematic instruction and practice in various clinical laboratory procedures.

This hasty review of the present teaching of medicine at Harvard brings out two things, namely, that now several men are devoting almost the entire day to teaching and that satisfactory teaching is incompatible with a satisfactory handling of an out-patient clinic by the same individual. This is a marked contrast to the former system, under which no man doing clinical teaching in medicine gave more than an hour or so to teaching work and that in connection with the management of a clinic. With the change has come a new employment for the younger men, clinical medical teaching. Clinical medical teaching as a vocation is new to Harvard, perhaps not yet fully realized. Still it bids fair to become soon a reality. What, then, has it to offer to the young medical man? First, it affords moderate income. This has been rendered possible in good part by the activity of this Alumni Association, which has raised a fund to be used annually in increasing salaries for such work and which fund you increase this year to $1,500 — the equivalent of a $37,500-endowment.

However, salary is a lesser attraction. The chief one is that such work brings to the teacher many of the clinical advantages of large hospitals without the responsibility of the routine, it brings contact with students of active mind, it compels study and familiarity with medical progress and it affords some opportunity and incentive for investigation. In short, it affords a valuable training in medicine. A number of these opportunities under the old system in Boston came to the men only after a number of years had elapsed since graduation and at a time when the activity of youth was passing into the settled calm of middle life; in other words, too late for them to give their maximal value in training.

Unfortunately, the hospital system in vogue in Boston, with its unstimulating system of promotion by seniority, makes impossible the greatest incentive for a young man's adoption of such a teaching position, — the incentive of the feeling that success in medical teaching and investigation will bring the coveted beds in a hospital and a higher place on the faculty. Success in his endeavors may bring them, but this is largely a matter of circumstance. Knowing what I do of the inner mechanism of Boston hospitals, I feel as yet unable to advise the young graduate seeking advice to follow the course, which I regard as certain to give him at the end of four or five years the broadest training and best grasp of medicine, and to assure him that attainment of these qualities will give him a hospital position. Rather am I forced to say, " Do certain routine which will train you a little, but bring a reward for faithfulness in an out-patient department, from which you will rise to the dignity of wards in due season — a long season, perhaps — even though you may learn but little more than you now know, and devote what time is left to your medical teaching and investigation. The latter will add breadth and force to your training, though it may not hasten your promotion." Gentlemen, we cannot expect to get the best men in teaching and research until the principle is established that he who does creditable work will be appointed to the out-patient department and promotion to the wards will come to that man young or old, who has best utilized his opportunities for work, whatever his seniority rank. This stimulus is needed by almost every man, and with it more hard work will be done.

Changes that must come soon in the staffs of Boston's large hospitals will give an opportunity for the hospitals to show whether adherence to the precedent of seniority promotion will continue or not. If seniority determines these promotions, I can but feel that medical progress in Boston has received a serious setback. So long as the medical school controls no hospital appointment in Boston, as is now the case, it should strive in every way possible for the principle of promotion to the best man, in order that for its teaching it may command the best local talent. Cessation of seniority promotion in Boston hospitals would, I believe, greatly aid in getting the best local men for our teaching.

I have not speculated as to the future development of the Harvard Medical School. Each can build for himself medical air castles. To maintain its relative position Harvard Medical School, however, must be active. Laboratory buildings we have in every way adequate. The crowning glory of a medical school — the hospital — we lack. I cannot refrain from saying that the Brigham Hospital will not be that crowning glory unless the appointments be controlled by the medical school, teaching be freely permitted and there be a single head to each service. A large number of patients across the street are no asset to the

student, unless he can come in contact with them and have competent instructors. Too often do we boast of the many hospital patients in Boston as a valuable asset to the medical school, forgetting how few of these are really accessible to our students. Not more patients, but more contact with patients is the present great need of our students.

If the Brigham Hospital is manned as the present Boston hospitals and be free of university control, to my mind its nearness will be its only advantage, and it may well serve as a perpetual preventive of what we need, — a university hospital. An improvised dwelling house with few patients would be better for us than a magnificent hospital, uncontrolled by the medical school, for in the former, at least, the medical school can determine the policy and appoint the best man capable of doing medical investigation and teaching, and in this wise lay the beginnings of a university hospital, which in due season will grow to be an institution that is a fit companion of our present laboratory buildings. But I have digressed from my main topic.

Notwithstanding the fact that at present the medical school cannot appoint to hospital positions the men regarded as most capable of teaching and investigation, yet the advantages of the training offered the young medical man by such an employment of his time as is afforded by teaching in the departments of medicine, are great, and these positions, I wish to emphasize, are for the young men and should be held for only a few years. Continuance in them is desirable neither for the man nor for the school. The personal pleasure in such work in itself would well recompense the man during these few years and the training gained would at least be no bar to hospital promotion. So, in those years, while awaiting an appointment in the out-patient department, medical teaching offers many attractions. If followed by the brighter men, at least, we will have soon in America a class of men from which to draw clinical professors, when freer interchange between our schools becomes possible, and who in the meantime can redeem us from the just criticism that in America rarely does a man continue clinical investigation beyond the first decade of his medical life, and that our medical leaders represent but little that was not embodied in our medical leaders of half a century ago.

For these reasons and others, I trust that the recent changes made in the teaching of medicine at Harvard will result in attracting the younger men to the positions which give them teaching experience and opportunity for clinical investigation. All effort possible on your part directed to this end will be a great boon to the medical school and a factor in the uplift of the standard of American medicine.

The Croonian lectures of the Royal College of Physicians, London, have been delivered by Dr. W. J. R. Simpson on "The Plague." — *Science.*

Original Articles.

THE MEDICAL AND SURGICAL ASPECTS OF PERFORATING TYPHOID ULCERS.*

BY RICHARD H. HARTE, M.D., PHILADELPHIA.

Since typhoid fever has become such a widespread disease, with its apparently unavoidable and fatal complication, namely, perforation, which has been estimated to amount to as many as 16,000 annually in the United States alone, it renders a discussion of the subject one of perennial interest, and, I think I may add, of considerable value. It is only by a discussion of the relative value of the various symptoms and modes of treatment at present known to us, that we can hope to save more of these cases from a fatal termination.

Although it may be somewhat of a presumption to call your attention to a subject which has already received such able treatment by many of the physicians and surgeons of Boston, yet I venture to present for your consideration some of the conclusions that I have myself reached, with the hope of carrying home with me, as the result of your kindly discussion and criticism, some ideas which will be of practical utility to my future patients.

I cannot but feel the importance, in the treatment of desperate cases of typhoid fever, of the surgeon and physician daily seeing the patient together, as it is impossible for a surgeon suddenly called in consultation, knowing nothing of the individual peculiarities of the patient, to positively diagnose perforation. Neither does it seem necessary that the surgeon should be called in consultation in every case, particularly before the physician feels that there is cause for alarm.

The physician is of the greatest help to the surgeon in deciding on the propriety of surgical intervention. An over-enthusiastic surgeon would many a time open a patient's abdomen were not the physician at hand to remind him that sudden pains in the course of typhoid fever are not unusual; that a leucocytosis of from 10,000 to 12,000 has occurred and the patient seemed none the worse; that the patient has vomited at times without appreciable cause; or, that in another instance, abdominal pain and fall of temperature was significant of intestinal hemorrhage and not of perforation. Of course, the surgeon must in the end assume the responsibility; he cannot and he should not regard himself merely as a machine in the hands of the physician. Therefore, to render himself competent to appreciate the changes produced in typhoid fever by perforation, he must familiarize himself with the normal aspects of the disease; he should be acquainted with the slow pulse, the disproportionate high fever; the distention of the abdomen, its normal resistance and susceptibility to pain; and he should pay particular attention to the facial expression of the patient. This facial expression and the change

* Read at the meeting of the Surgical Section, Suffolk District Medical Society, in conjunction with Boston Medical Library, March 13, 1907.

which occurs in it after perforation is so characteristic, though difficult of description, that to one who is familiar with the patient's daily aspect, it becomes a surprising help in diagnosis. Hence, I think it well for every surgeon in hospital practice to keep himself fairly familiar with all the very ill typhoid patients in the wards. I have endeavored to carry out this plan with my colleagues as far as possible at the Pennsylvania Hospital, with the most gratifying results.

In the paper under consideration I wish to express as far as possible the results of our experience as obtained from the study of 80 cases of perforation, which have been operated upon by my colleagues and myself since 1901 at the Pennsylvania Hospital. I find that our experiences and the results obtained from them have already been presented in a paper by Dr. Ashhurst and myself (published in the Transactions of the American Surgical Association), based on 362 operative cases.

I wish here to express my appreciation of the very careful and accurate work which my colleague, Dr. J. A. Scott,[1] has done at the Pennsylvania Hospital. His reports have proved of great value, and for the statistics herein set forth I have largely depended on his figures. I find that Dr. Scott's studies corroborate the deductions which I have already arrived at in my previous papers on this subject[2].

From January, 1903, to March 2, 1907, there have occurred in Philadelphia 34,725 cases of typhoid fever with 3,805 deaths. Considering that at least one third of these deaths are due to perforation, we have had 1,268 perforations to deal with in Philadelphia. Some of these cases should have recovered, and it remains for the attending physicians to determine how many are to be recognized and submitted early to surgical interference, with the hope that a fair percentage of recoveries may take place. The statistics thus far compiled give too low a mortality rate, I believe, as many fatal operative cases have never been reported.

There is no doubt that certain typhoid epidemics are more virulent than others, and the resulting ulcerations occurring in the bowel are deeper and greater in number, and where perforation has occurred and the patient has been operated upon in these serious cases, secondary perforation frequently occurs with a fatal result. In our series this has been experienced repeatedly.

In summing up our work at the Pennsylvania Hospital along this line, we have operated on 80 cases of typhoid perforation, of which 15 have recovered, giving a mortality of 81.25%.

Now permit me to take up, *seriatum*, the general subject of perforation.

Predisposing causes. — The causes of perforation are numerous; among them may be mentioned race, sex, age, stage of the disease, severity of the attack, severity of the epidemic, intestinal parasites, etc.

It would appear that the negro is less disposed to perforation than the white. Out of 25 operations of my own, only one patient was colored, making 4%; and this seems to be the experience of other operators.

Males are more liable to suffer perforation than females.

As a rule typhoid fever is a disease of early life, and consequently most perforations occur between the ages of 15 and 30 years.

From a careful analysis of a large number of cases, the third week of the disease is the most usual time for perforation. It may, however, occur at any time during the height of the disease, or even before the patient feels particularly sick, as has been noted in a number of ambulatory cases.

There is no doubt, as before mentioned, that certain epidemics of typhoid fever are more virulent in character than others, the ulceration of the Peyer's patches in such instances being deeper and more extensive than in the milder cases, causing a greater tendency to perforation.

Virulent cocci or bacilli may cause a secondary infection resulting in extensive inflammation, necrosis and, later, perforation. Anything which sets up unusual peristaltic action in a previously diseased intestine — undue involuntary contraction of the abdominal muscles, straining at stool, urination, cough, sudden spasm or struggle incident to a cold bath, may be a factor in producing perforation. There is no doubt that irritating foods brought to patients by their friends should be classed as exciting causes. When perforation occurs during sleep, without any apparent exciting cause, it may rightfully be attributed to excessive necrosis.

Intestinal parasites have been mentioned as possible factors in perforation, but I do not consider them as such. I do believe, however, that they are a predisposing cause in appendicitis.

The *pathological lesion* in typhoid fever is confined largely to the last three feet of the ileum, although extensive involvement of the colon may be found, even down to the sigmoid. But it is in the last two feet of the ilium that perforations are most apt to be found, varying in number from one to six or more, and depending as to their size largely on the character and depth of the ulcers. Not infrequently at the time of the operation, when the intestine is exposed, one perforation may be found, while half a dozen ulcers can readily be detected through the peritoneum, both by the eye and by the sense of touch. These ulcers are favorable sites for future perforation. When the peritoneal coat does finally give way, the opening at first is very minute, even smaller than a pin head. It will usually be covered with a small mass of frothy mucus or liquid fecal matter. Around this area will also be found considerable masses of lymph, and in seeking for the point of perforation this lymph must be gently removed with gauze, after which the perforation will not infrequently be brought to light. Again, a large opening may exist, varying in size from the end of a pencil to the tip of the finger and permitting feces to escape. What will be noticed on the

[1] Univ. of Penn. Med. Bull., May and June, 1905. New York Med. Jour., Feb. 9, 1907.
[2] Ann. of Surg., Jan., 1904. Jour. Am. Med. Asso., Oct. 28, 1905.

operating table differs but little from what all have frequently seen in the laboratory. If cultures are made the typhoid bacillus will be found to be the infecting cause, with a low grade of peritonitis. If streptococci rather than staphylococci abound, the lymph is more abundant and the prognosis consequently more grave.

Time will not permit of a lengthy discussion of the many interesting points of this subject from a pathological standpoint, but the chief interest in doubtful cases is whether or not a perforation has taken place.

With our present knowledge of typhoid perforation there would appear to be little difficulty in making a positive *diagnosis*, but unfortunately typical cases are the exception. Not infrequently a case may present all the clinical evidences of perforation, submit to operation, and no signs of any peritoneal irritation be found. On the other hand, patients may die without any abdominal symptoms of importance and at autopsy a perforation may be found. Nevertheless, there are certain classical symptoms which must be borne in mind and which must be thoroughly analzyed in every suspected case, for otherwise errors will be made in diagnosis.

Pain is one of the most valuable symptoms in diagnosis, and the greatest attention should be paid to it. It varies in degree and in location and also in character, but it usually is more or less paroxysmal. Its severity may be so marked that the almost comatose patient may cry out with it, or, on the other hand, it may be very mild. It is usually of a stabbing character, situated most frequently in the lower right quadrant of the abdomen. It may be felt in the epigastrium and umbilical region, or in the bladder, and, in the male, at the end of the penis, or sometimes in the left iliac fossa. These facts should not be overlooked in patients who are apathetic, or are so far advanced in the toxemia of the disease that they do not appreciate pain. Thus it often happens that the first evidence of perforation is a distended abdomen with a movable dullness in the flank. I recall a case where the first sign of perforation was a violent attack of pain, causing the patient to scream out and draw up his legs in bed. This lasted but a short time, leaving only muscular rigidity upon which to base a diagnosis. On the other hand, it must be borne in mind that pain is a common thing during typhoid fever, due to the ingestion of improper food, flatulence, or a dozen different causes of irritation within the lumen of the gut. Therefore, it is imperative that this symptom be thoroughly guarded and carefully analyzed. In our experience at the Pennsylvania Hospital pain was a constant and reliable symptom in about 75% of the cases operated upon. The subject of pain is so important that I hastily run over a list of conditions which may be responsible for it. Among these may be mentioned hysteria, pleurisy, pneumonia, distended bladder, menstruation, appendicitis, peritonitis, cholecystitis, rupture of the gall bladder, liver abscess, phlebitis and thrombosis of the iliac vessels.

Manges[3] very aptly puts it when he says that the solution of some of the problems of the real significance of pain will be found when we know more about the exact relation of non-perforative peritonitis in typhoid fever.

There can be no question but that pain when present is a most valuable and important symptom and it would seem that it must always be present to more or less an extent after a perforation has taken place. But here the personal equation has always to be considered. What one patient will consider pain, another may express as only slight discomfort.

Sweating, either alone or accompanied by a fall of temperature, frequently accompanies the pain of perforation. The sweating may be profuse, involving the entire body, or only the head and neck. With it there is often a fall of temperature, and, in my experience, it is fairly consistent, varying from 2° to 4°. Where no fall of temperature occurs it may be due to the fact that the temperature had not been taken until the advent of peritonitis, which had restored it to the original range of fever. I consider it a good rule to have the temperature taken immediately and repeatedly after the occurrence of any abdominal pain, until all doubt is passed. A fall of temperature frequently accompanies intestinal hemorrhage during typhoid fever, but the hemorrhage is, as a rule, painless and usually evident in the stools in the course of an hour or so.

In considering the *temperature* it must be borne in mind that a sudden chill is a warning that must not be overlooked. In the last case I operated upon, a chill occurred some hours before a diagnosis of perforation was made. It does not often occur, but when present is significant of some sudden peritoneal irritation.

Rigidity of the abdominal muscles is one of the most valuable signs in the diagnosis of intestinal perforation, and I think its value is more generally appreciated by the surgeon than by the physician. This rigidity is *reflex* and hence is *involuntary*, depending for its production on the overflow of stimulus received in the lumbar cord from the inflamed peritoneum and is most noticeable in the right rectus and oblique muscles of the abdomen. Voluntary rigidity of the abdominal muscles is not uncommon in typhoid fever, as the patient tries in this way to protect his sore and swollen intestine from the useless pressure to which he is subjected at the hands of some physicians. I hope I may be pardoned if I say that I do not think all physicians realize what a surgeon means by abdominal rigidity. It is not elicited by trying to palpate the lumbar spine, but can be detected by the merest touch of the finger tips. The finger tips, however, must be as well trained in their work as is the skilled ear of the physician who frequently studies obscure heart lesions. It must be remembered that the sensorium in typhoid is so blunted that this symptom may not be so quickly recognized as in appendicitis.

Tenderness is not as valuable a sign as rigidity,

[3] Mt. Sinai Hospital Report, 1905.

since tenderness may exist where no perforation has occurred. It can be elicited to a more or less extent in almost every case of typhoid fever. However, when there is a definite spot of tenderness and it is accompanied by other significant symptoms, it must not be disregarded. In examining the abdomen for tenderness the rectum should never be overlooked, as a knuckle of the ileum may perforate and slip into the pelvis and thus for a time escape detection in a superficial examination of the abdomen. This was very noticeable in a case operated upon a short time ago by Dr. Stewart at the Pennsylvania Hospital. The case was suspicious, but nothing was positive until a rectal examination was made which revealed a spot of great tenderness, and when the abdomen was opened a perforated knuckle of gut covered with lymph was found lying alongside of the rectum and surrounded by exudate. The perforation was closed, the pelvis washed out and the patient recovered.

Vomiting is of so common occurrence in typhoid fever, without any apparent cause, that it cannot alone be considered as indicative of perforation, but when it occurs for the first time, and especially where it either precedes or follows pain, it should not be disregarded.

About the time of perforation a peculiar change takes place in the *facial expression*, which is most significant. It is difficult to describe, but once seen is never forgotten, being distinctly characteristic of the shock of perforation.

There is in the majority of cases an increase in the *pulse rate*. In typhoid fever the usual pulse rate is from 80 to 100 beats per minute, but after perforation it is apt to rise rapidly from 120 to 140 within ten or fifteen minutes following the onset of pain.

Distention of the abdomen is often present throughout the disease, and is not an important sign, although it becomes more pronounced after perforation. The important point to determine is whether the gas is within the bowel or free in the peritoneal cavity.

Dullness on percussion is a very fallacious sign, and palpation of the liver dullness, on which so much dependence was formerly placed, is even more elusive. Intestinal distention frequently precludes palpation of the hepatic dullness; even when air is free within the peritoneal cavity liver dullness may exist. Dullness in the flank is not always pathognomonic of fecal extravasation, as a freely movable colon with liquid feces within it may give rise to a similar condition.

It has been asserted by Crile and others that the blood *pressure* rises about the time of perforation and can be demonstrated by the use of the sphygmograph. I have not had any experience along these lines and am inclined to regard it as being of more interest to the laboratory observer than to the practical surgeon and physician.

The *examination of the blood* is now generally conceded to be of little value, or at least such has been our experience at the Pennsylvania Hospital. During typhoid fever the number of leucocytes is physiologically diminished and it would seem as though the patient's exhausted condition prevented a leucocytosis. A high leucocytosis may render positive the diagnosis of perforation, whereas a low count should be interpreted as showing that a perforation does not exist, since the patient in the latter case may be entirely overwhelmed by the typhoid toxins and no leucocytic action be possible. Kast and Gutig have shown that in typhoid fever complicated by secondary infections the leucocytes are much lower than when such infections occur alone. In the observations made by Longcope, at the Pennsylvania Hospital, on the bone marrow in cases of typhoid fever, it is shown that when the disease is complicated by a severe secondary infection, there appears to be an actual inhibition of the formation of the polymorphonuclear leucocytes in the bone marrow. A wave of leucocytosis is here described as reaching its maximum just after perforation and then subsiding.

I am firmly of the opinion that a careful blood picture should be drawn wherever possible, but that the results should never be considered, except where they confirm existing clinical signs.

From what has thus far been considered, it would appear that in a typical case of typhoid perforation but little difficulty would be experienced in making an accurate diagnosis. But this point should never be lost sight of, — that it is one thing to operate on a case of typhoid perforation, and a decidedly different thing to operate on a case of septic peritonitis, the result of typhoid perforation, which has existed for some time and which has been evinced by milder and more localized symptoms which have not been recognized and properly interpreted. Any person who has seen many cases of perforation will be struck with the difficulty of estimating the exact time of the accident. This is emphasized in the elaborate and comprehensive report by Drs. Shattuck, Warren and Cobb, published in 1900.

It has been asserted that difficulty is experienced in making a diagnosis where the question of *hemorrhage* is concerned, as to whether the hemorrhage was responsible for many of the symptoms that present themselves or not. As before mentioned, the collapse is likely to be the same in either case, yet hemorrhage is usually unaccompanied by pain or rigidity. The escape of blood from the bowel soon tells its own tale. As a rule perforation cases are seldom accompanied by hemorrhage, probably not more than 10%. In one of my own cases both hemorrhage and perforation existed, as was proven by laparotomy. The bleeding point was ligated and the perforation in the bowel closed, after the establishment of an artificial anus. In appendicitis also it may be impossible to make a positive diagnosis, especially if the appendix is perforated. In non-perforated cases of appendicitis the pain is not so severe, the temperature does not show such a sudden drop and the facial expression is not so characteristic. Peritonitis, due to pelvic or ovarian disease, can usually be eliminated after a careful vaginal examination. Gall-bladder

affections are not uncommon during an attack of typhoid, owing to typhoid bacilli finding their way into the gall bladder, causing much disturbance and even rupture. This occurred in a case a short time ago at the Episcopal Hospital. Pain in the gall-bladder region, possibly jaundice, symptoms of shock, with rigidity, dullness and possibly a palpable mass, all aid in determining the character of the invasion. The perforation of gastric and duodenal ulcers during typhoid fever simulates very much the symptoms of an intestinal perforation in the ileum, and the local signs are our chief aid in making the diagnosis. Iliac thrombophlebitis, suppurating mesenteric glands, splenic infarcts, all may cause peritonitis during the course of typhoid, and are not so characteristic of perforation. Where pain exists the greatest care must be exercised in determining its origin.

I recall two cases, one where the pain, muscular rigidity, anxious expression, etc., pointed to perforation. The regular passage of a fair amount of urine and the inability to palpate the bladder led to a tentative diagnosis of perforation. After the introduction of the catheter, however, 188 oz. of urine were evacuated, and all symptoms immediately subsided. In the other case a diaphragmatic pleurisy caused a similar train of symptoms, which subsided on a thorough fixation of the side.

The *prognosis* in typhoid fever depends largely and almost entirely upon the promptness with which the condition has been recognized and the patient operated upon, provided that the area of ulceration in the bowel is not too extensive and the patient is not too toxemic, as the result of a prolonged illness.

Of nearly 600 cases which I analyzed 24.65% left the surgeon's hands well, there being a *mortality* of 75.35%. These figures, I am convinced, are too high, owing to the tendency to report only cases in which recovery has taken place. My own experience, based on 25 operative cases, gives a percentage of recoveries of 20%. Out of 39 operative cases, up to January, 1905, reported by Dr. Scott at the Pennsylvania Hospital, there were 12 recoveries, giving a *recovery* rate of 30+%. Since January, 1905, a heavy mortality has been experienced in all operative cases at the Pennsylvania Hospital, reducing the percentage of recoveries to 18.75%.

Vaughan,[4] of Washington, reports 10 cases of typhoid perforation operated upon by him, with a recovery rate of 40%.

I cannot help but feel that as time progresses the mortality rate in these cases will be diminished, as surgeons will segregate these cases, and only operate upon those where there is a possible chance for recovery.

The *operation* and *after-treatment* of intestinal perforation is probably so familiar to every one here, that it seems hardly necessary for me to discuss its technique to any great extent. Yet I feel convinced that there are some points which may be open to question. I am convinced of the importance of operating as soon as possible after a diagnosis has been made and this should not, under ordinary circumstances, consume more than ten to twenty minutes. I never wait for the so-called reaction to take place before opening the abdomen. The valuable time that is often lost after the first suspicious symptoms manifest themselves, in making the diagnosis, in obtaining the consent of the patient or his family to operation and in the transportation of the patient from the typhoid ward to the operating room, is all too great. I look forward in all large hospitals to the time when the management will *insist* that when the patient is admitted to the medical ward the physician in charge shall have the consent of the patient and his friends to operate immediately, should the urgency of the case demand it. In cases in which there is an element of uncertainty in the diagnosis, and where the symptoms do not ameliorate, I think that an exploratory examination should be made. Experience has curiously demonstrated that where no perforation exists an exploratory examination is usually followed by improvement, and there is hardly a reported instance where operation can be said to have hastened death. In my own experience in 27 cases, two were found to be non-perforative, and they really seemed improved by their sojourn in the surgical ward and went on to a hasty convalescence.

I always employ general *anesthesia*, ether preceded by ethyl chloride (if not contra-indicated), and if this is intelligently administered the patient in a few moments drops into a peaceful sleep without a struggle. The unconsciousness thus gained on the patient's part is much more valuable in the rapid completion of the operation than are any of the advantages, imaginary at best, which can be claimed for local anesthesia. It must be remembered that ether is a heart stimulant and doubtful cases not infrequently improve so much under its administration as to render an operation justifiable.

There are few surgeons to-day who advocate anything but the right-sided incision. Those who adhere to the median incision must have had a limited experience. Seventy-three per cent of the perforations are situated within 12 inches of the cecum and 94% are in the last two feet of the small intestine. In addition to this it is very difficult, when the abdomen is opened, to determine in which direction the presenting loops of bowel run, no matter how proficient one may be with Monks' method of intestinal localization, invaluable as it is for other intestinal investigations. If the cecum is first located it is easy to trace the ileum upwards until the perforation is found. This is materially aided by having your assistant examine one side of the intestine while you are watching the other side during its rapid removal from the abdominal cavity. In this way much time is saved and there is less likelihood of the perforation being overlooked. If in searching for a perforation it is noticed that when the color of the ileum begins to fade quickly from its dark, congested shade to the normal pink,

you may be positive that you have run beyond the perforation limit, and doubtless have overlooked a small pin-point perforation, probably covered with a few flakes of lymph.

As soon as the perforation is found it should be sutured, thus preventing undue soiling of the peritoneum. In about one out of every 8 cases more than one perforation will be found. Hence diligent search should be made for all inflamed areas and every spot, even threatening perforation, should be *inverted*. The inversion of the perforation with Lambert sutures of silk is usually best done in the long axis of the bowel, as transverse sutures are more prone to tear out as the intestine resumes its normal convexity. However, under certain conditions a transverse suture may be most applicable, especially if the opening is large.

Excision of the ulcer is not only useless but harmful, as it is a waste of time and may cause hemorrhage. If the opening should be too large to preclude suturing an omental flap may be adjusted over it, or if the conditions do not readily admit of closure, an artificial anus should be established. Excision of the bowel with an end-to-end anastomosis is too severe and slow an operation, as proven by its failure in every reported case. In desperate cases, where an extensive area of the ileum is studded with large, deep ulcers, all of which are on the point of perforating and where inversion is out of the question, an artificial anus may be quickly established and the efferent loop of bowel washed out with salt solution, so as to remove all irritating substances from the surface of the ulcer, thus reducing the tendency to fresh perforation. My last case, upon which I operated about two weeks ago, was of this type.

The *toilet of the peritoneum* has been a subject much in dispute in cases of peritonitis from any cause. It depends, however, almost entirely upon the amount of soiling and extravasation that has taken place within the peritoneal cavity, as to what method shall be employed for the removal of all infectious material. If the operation has been early and little or no soiling or extravasation has taken place, all the cleansing can be accomplished by the judicious use of dry gauze.

But if, on the other hand, which is usually the case, the pelvis is partly filled with fluid, stained with fecal matter and pus, the coils of intestine smeared with escaping fecal matter, and all the area in the region of the perforation in a state of surgical filth, then I cannot see that there is any other alternative but thorough irrigation of the abdominal cavity with hot saline solution. In my opinion this is the most efficacious method of cleansing the abdominal cavity, and I am sure, if rightly done, offers the patient the best chance of recovery. I cannot see that infection is much diffused, or that the patient is much shocked by this procedure. It often occurs that the infectious material is widely diffused, but has not yet been absorbed. If adhesions have not been formed, and if the infective material can be removed quickly, absorption will be diminished, or effectually prevented. On the other hand, the time required and the traumatism frequently inflicted in the sponging process must condemn this method to the conscientious surgeon. The only other cause open is to leave fecal matter, and perhaps pus, free in the abdominal cavity, compelling the patient to take his chance to fight off the probability of infection, with no other help than that afforded by a drain.

To satisfactorily cleanse the abdomen by *irrigation* does not mean pouring a few pitcherfuls of solution into the abdomen and then mopping it out in an aimless manner. The surgeon should be provided with a large, hard rubber tube, having a lumen of ¾ of an inch, with multiple perforations, and with a rubber tube and a funnel attached to the other end. Through this funnel should be poured gallons of hot salt solution, at a temperature not less than 110° F. The tube should be inserted first down to the pelvis, then between the coils of intestine, while the surgeon separates them with his left hand while manipulating the tube with his right. During the irrigation the pulse will, as a rule, improve, partly due to the heat of the solution and the refilling of the vascular channels by absorption. To combat shock it has been suggested that adrenalin be added to the solution. I have used this, however, in only one case and with a negative result.

Drainage is best maintained by large rolls of gauze placed in those regions of the abdomen where fluid is wont to accumulate, namely, the pelvis, each loin and between the folds of intestine, along the sutured bowel. Intravenous injection of salt solution is of great aid, preventing shock and sustaining the patient during the first few hours following operation.

No little discussion has arisen as to what position patients should be placed in on their return to the ward. Some advise the extreme Fowler position, that is placing the patient in the Sims's sitting posture, in order to facilitate drainage towards the pelvis. There is no question that this is all right, in perforated gastric or duodenal ulcer, gall-bladder infections, etc., but it must be borne in mind that typhoid patients are usually exhausted by a long illness and are frequently so toxic and delirious that it is not only unwise, but almost impossible, to keep them in a sitting posture. I have seen it, to my mind, do decided harm to toxic patients, although the patient's condition after operation was fairly good. I am strongly of the opinion that the majority of cases after operation will do better in the horizontal position, and that drainage can be perfectly maintained without any undue tax on the strength of the patient.

As a rule no *food* should be given by the mouth until the third or fourth day. During this interval nourishment should be maintained by nutritive enemas, and when food is finally given, it should be of the blandest kind, for the surgeon must remember that the patient has typhoid fever as well as a sutured intestine.

Finally, I would say that I have no reason to

change the conclusions at which I arrived some time ago, and which were published in my previous paper.[5]

1. Perforation of the bowel in typhoid fever is a much more common condition than is generally supposed, being responsible for about one death in every three cases.

2. The most common time of perforation is between the fourteenth and twenty-first days of the disease and occurs in all grades of severity, from the ambulatory to the hemorrhagic type, and does not seem to be any more common in the hemorrhagic than in the milder types of the disease.

3. The ileum is the most frequent site of perforation, in the majority of instances the perforation occurring within 12 to 18 inches of the ileocecal valve. The next most frequent sites of perforation are the appendix and the cecum.

4. Pain of some kind is present in 75% of all cases. In 50% of the cases the onset is sudden and severe and of increasing intensity, localizing itself to a special zone. In 20% of the cases the pain is of slow onset, not localized, with general distribution. In some cases no pain is complained of and the usual symptoms of perforation are absent.[6]

5. Tenderness and rigidity are present to a certain extent in all cases. The latter symptom I regard as a most valuable sign, and it is rarely wanting, except in patients with unusually large and pendulous abdomens.

6. When perforation is suspected the temperature should be taken every hour, as it is only in this way that definite conclusions can be drawn with regard to any marked variation in this symptom.

7. Distention is a late symptom of perforation, usually not making its appearance until some hours after the perforation has occurred. The obliteration of the liver dullness is not regarded as a reliable sign of perforation.

8. The study of the leucocytes is of little aid, although occasionally their increase may make you more positive of the diagnosis. The differential count is of no practical value.

9. Before a positive diagnosis is made, pain caused by a pleurisy, pneumonia, cholecystitis, acute gastro-intestinal indigestion, iliac thrombosis, appendicitis, peritonitis, the passage of a renal calculus, distended urinary bladder, or even a hemorrhagic exudate into the abdominal muscles, must be carefully considered. Any of these conditions may cause symptoms similar to those caused by intestinal perforation.

10. Nature may occasionally close one or more perforations, but the only rational procedure where perforation occurs is surgical intervention. No case is too desperate for an attempt, as it has not infrequently been noted that the mild cases succumb and the more desperate ones recover.

11. In cases of doubt, where the symptoms point to perforation, the safest procedure is to operate. As a rule, cases operated on and no perforation found seem rather to be benefited than otherwise by the operation.

12. When the diagnosis has been made, I know of no condition, except possibly that of hemorrhage, where speed in operating is so important a factor in securing success, as it is in intestinal perforation. Everything should be carefully prepared beforehand and all conditions considered, so that when the operation is once begun things should move with rapidity and without any interruption.

[5] Jour. Am. Med. Asso., Oct. 28, 1905.
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PERFORATING TYPHOID ULCERS.*

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WE are under obligations to Dr. Harte for his comprehensive and interesting paper. The closer association of work which he suggests between the physician and the surgeon would be of great value in other affections as well as in typhoid, and profitable to the patients as well as to the medical men. There are, however, practical difficulties in carrying it out. Each man has his own patients to look after, and when he has got through with those inside the hospital he usually has not too much time for those outside.

His other suggestion, that an understanding should be reached that every case of typhoid admitted to the hospital may be operated on without delay, if deemed necessary, seems to involve no serious difficulties, and should, it seems to me, be generally adopted.

It is interesting to learn that those patients operated upon without any perforation being found did so well. I find it hard to believe that their improvement was due to the operation, which was presumably done well on in the third week at about the time when the disease naturally abates. I am sure that Dr. Harte does not mean to recommend anesthesia and laparotomy as a routine remedial measure for typhoid fever.

Not knowing what Dr. Harte was going to say or exactly how he was going to treat the subject, I put down in writing what I have to say, especially from the point of view of the physician.

Perforation is the gravest complication of typhoid fever. Fortunately it is rare. Of 2,047 cases of typhoid treated in the Massachusetts General Hospital in the past ten years, it has been known to have occurred in 30, or in 1.4% of the cases. I have had no case of perforation, myself, since 1899.

It is most liable to occur in the third week, but may occur at any time after the middle of the second. It may occur in the first or second relapse, the primary attack or attacks having run a favorable course. There is no relation between the severity of the case and the liability to perforation.

The duties of the physician with regard to perforation in typhoid are four-fold: (1) He must know the symptoms suggestive of its occurrence; (2) he must be on the watch for them; (3) he must see that the nurse or attendant knows and is alive to them, in order that he be sent for at the earliest

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threatening moment; (4) he must not delay calling in a surgical colleague.

Sudden abdominal pain, accompanied or soon followed by spasm, and later by tenderness, probably, but not necessarily, localized, coming on at or after the middle of the second week, are symptoms not to be lightly regarded. Vomiting may or may not occur. Rapidly increasing leucocytosis is highly confirmatory, but we must remember that operation has proved the existence of perforation and peritonitis without increase in the white count. Here, as in other diagnostic problems, it is the association of symptoms and signs — the whole picture — which counts rather than any one symptom or sign. Rapidly increasing distention in connection with the above indications suggests that peritonitis is general.

The milder the typhoid, the more free from distention the patient; the less toxic he is, the more classic are the symptoms likely to be, other things being equal. This is fortunate, inasmuch as the hope from operation is small in a patient exhausted by a severe acute infection of usually at least two weeks' duration, with an intestine more or less paretic, with the sensorium so benumbed that it recognizes only feebly, if at all, the supervention of perforation. While perforation cannot be recognized in a certain proportion of cases, I strongly incline to the opinion that the pronounced typhoidal state is distinctly less common now than thirty-odd years ago, in my undergraduate and interne days, thanks to more rational treatment and a vast improvement in nursing.

Moreover, the fact that the early recognition of perforation may through operation save life in itself leads to greater alertness on the part of the physician than was called for in the days when opium was practically the only weapon against this form of the *vis lethalis naturae*. Nowadays, only the minority of perforations go unsuspected or unrecognized in good hospitals or under good care in private. It is surely desirable that recognition should be early and that surgical consultation be held as soon as possible. The interest of the patient is thus better safeguarded. Were medicine and surgery less closely intertwined than they are, the duty of the physician might be said to be done after recognition and calling a consultation, but many a man must, perforce, be both physician and surgeon, and, where limitation of practice is possible, there are more surgeons who practice medicine than there are physicians who practice surgery.

General considerations and the experience of the past must be given due weight in conjunction with the special features of each case before the decision is reached, whether and when to operate. I have believed that in a patient in fairly good condition and with undoubted perforation operation cannot be done too early. There seems to be some division of opinion among surgeons whether it is not wiser to wait until the first shock of the perforation has passed. There appears to be warrant for this division in the Massachusetts Hospital cases for the past ten years. I note that in the six recoveries after operation, the apparent interval between the first indication of perforation and operation was twenty-three, twenty-four, twenty- three, twelve, eight and four hours.

In 8 of the fatal operated cases, the interval was twelve hours or less. In 2 cases it was less than two hours. One of these was mine, as favorable a case for operation as one could wish for. When I made my visit in the ward, the man, who had given me no anxiety, was asleep, and, looking at his chart, I passed him by. Before I left the hospital he was reported as having severe abdominal pain. I went back to him and in about an hour he was under the knife, but died.

In the other 6 fatal cases, the interval ranged from eighteen to thirty-six or more hours. In one of these, the first symptom of perforation occurred sixty hours before operation and general peritonitis had existed twenty-four hours before, yet the patient withstood the operation and died nine days later from a secondary perforation.

It would seem to me that better results in the future are to be looked for through prompt recognition of the condition, more accurate knowledge than we seem to have at present as to the time of election, with due consideration of the special features of each case, and realization of the fact that a patient with perforation in the course of an acute, though prolonged, infection tolerates anesthesia and intervention less well than one in full health with perforation of the stomach or appendix.

MISTAKEN DIAGNOSIS IN CASES OF TYPHOID PERFORATION.*

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CONSIDERABLE interest and importance attaches to the knowledge of those cases of typhoid fever, in which a mistaken diagnosis of intestinal perforation has been demonstrated by operation. These instances of mistaken diagnosis fall naturally into three groups: (1) Those in which no lesion is discoverable; (2) those in which the lesion found does not involve the peritoneum; (3) those in which the lesion is found within the abdomen, involving the peritoneum.

In the first group of " no lesions found " are the following: The case of Harringham & Bowlby,[1] in which there were symptoms of typhoid perforation on the twenty-eighth day of the disease; the two cases of the collection of Shattuck, Warren and Cobb,[2] cases 22 and 23 of the first report, and the three cases recorded by Scott,[3] of Philadelphia, in a recent paper.

To the second group belong cases of pneumonia (Scott[4] records three cases), of gastritis, of enterocolitis and of hemorrhage, of Zenker's degeneration of the abdominal muscles (beginning

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with hemorrhage into the muscle), one case of a distended urinary bladder.

The symptoms of intestinal perforation, sudden abdominal pain, tenderness and rigidity, together with distention, vomiting and rapid pulse, are also symptoms of a peritonitis. Certain causes of peritonitis will be mistaken for typhoid perforation.

To the third group of cases of mistaken diagnoses belong certain of the lesions causing peritonitis, viz., *cholecystitis* and perforation of the gall bladder. Erdmann's [5] paper has noted a personal case and three cases from literature, which, added to Keen's [6] paper, makes a total of 34 cases of perforation of the gall-bladder. Seven operations were done in these 34 cases; five complete operations, with one death. All of the unoperated cases died.

Killiani [7] recently reported a case with two perforations of the gut and a perforation of the gall bladder during the fourth week of the disease. The patient lived twenty-one days after operation and died of gangrene of the lungs and empyema.

Allyn, of Philadelphia, reported in 1901 a typhoid case which died three days after operation, in the third week of the disease. No lesion was found at operation. At autopsy, however, there was discovered an opening in the gall bladder communicating with a small opening in the hepatic flexure of the colon.

Willis reports a perforated gall bladder during typhoid fever, in which two weeks after a cholecystostomy the patient died of peritonitis. A cholecystectomy might have terminated differently.

Ovarian cyst infections are recorded during the active period of typhoid fever. One case by Sudeck [8] and two cases by Lewis, Harte and LeConte [9] appear recorded. Five infections of dermoid cysts of the ovary are recorded, which were operated upon from three to eight months subsequently to the typhoid fever. Such are the cases of Werth,[10] Pitha [11] and Wallgren.[12]

Rotation and strangulation of Meckel's diverticulum is reported by Sailer and Frazier [13] to have occurred in a young adult male, during the acute course of typhoid fever — operated upon as if for a perforation of the gut.

Case XXI, Shattuck, Warren and Cobb, series 1, and the case of Körte, of Berlin, are instances of a rupture of infected mesenteric glands during the course of acute typhoid fever. In each of these cases a pure culture of the typhoid bacillus was secured from the peritoneal cavity at the time of operation.

Femoral and iliac thrombosis in three of Scott's series cause confusion in diagnosis. Thayer [14] records two such instances in Baltimore.

Of very great interest are the cases mentioned by Finney,[15] in which perforation of the intestine during the course of typhoid occurred without demonstrable typhoid bacillus, and also of interest are those cases in which a fatal *peritonitis* may develop a discoverable perforation. The Munich autopsies record 2.2% of such cases.

Gairdners'[16] Glasgow cases, five in number, are of this latter kind.

There is no doubt that an impending perforation exists in many cases — as illustrated in Case XXIV of the Shattuck, Warren, Cobb, 1st series; Case II, B. C. H. series; Scappacci, M. G. H. series, and Ayer, M. G. H., 2d series.

Murchison mentions as a cause of peritonitis during typhoid, softened splenic infarcts, abscesses in the bladder wall, abscess of the liver.

Mention is made in Scott's series of one case of a rectal ulcer and one case of pericolitis, mistaken for a typhoid perforation. Cases of appendicitis are occasionally operated upon for typhoid perforation.

I would especially call attention to a personal experience, in the following case: [17]

Adult female. Typhoid fever; end of the third week acute abdominal pain; rupture of an old pyosalpinx; rupture occasioned by an acute infection of the pyosalpinx by the typhoid bacillus. Diffuse peritonitis. Salpingectomy; the abdominal cavity irrigated and drained; the abdominal fluid contained a pure culture of the typhoid bacillus. Recovery.

A. C. S., thirty-eight years old, married. A patient of Dr. Stowe, of Medford Hillside. Massachusetts General Hospital No. 137,446.

She has always been well excepting for children's diseases.

About four weeks ago she was taken ill with malaise, cramps in the stomach and bowel and diarrhea. She went to bed May 15. She entered the hospital May 20. The abdomen was full, moderately distended, tympanitic, and the abdominal muscles were somewhat rigid. The spleen was not palpable. The temperature was 102.2° F. Pulse, 102. Respiration, 32. Hemoglobin, 80%, white blood count, 9,900. May 22 several rose spots were noted. Appearance, typhoidal. May 23, Widal reaction positive.

June 5, no distention, temperature nearly normal, very comfortable. June 8, at half past six in the morning, she had a severe abdominal pain. This pain was most intense in the lower part of the abdomen. The pain appeared just after a natural movement of the bowel. Immediately following this attack of pain the abdomen was held rather rigidly, and was moderately tender in the lower part. The pain was followed by a chill, and the temperature rose to 103.6° F. Slight shifting dullness was noted in the flanks. The rigidity of the abdominal muscles had increased. The white count rose from 9,000 to 18,000. An hour after the last chill the temperature rose to 104½°. At twelve o'clock, noon, the temperature was 105° and the pulse 130.

Vaginal examination discovered a fullness and increased resistance in the left cul-de-sac and a suggestion of bogginess. Operation at this time by a median incision below the umbilicus disclosed free, thick puriform fluid throughout the abdomen. There was no fecal odor to the fluid, nor was there any gas in the abdomen. The appendix was normal. The ileum was examined for several feet above the cecum and no perforation was found. The pelvis, where the pus was most abundant, was explored and a mass was found to the left of the uterus which proved to be a pyosalpinx, and corresponded to the tumor felt upon vaginal examination. The salpingitis was a chronic one. The wall of the sac was thick and edematous and had ruptured allowing the escape of the contents of the sac into the abdominal cavity. A salpingectomy was done leaving the left ovary. The abdominal cavity was flushed with salt solution. A gauze wick and

rubber tubes were placed in the pelvis. Excepting for a rise in temperature upon the ninth of the month, about nine days after the operation, convalescence was uninterrupted. The rise of temperature was thought at the time to be indicative of a slight relapse of the typhoid infection. The wick to the pus cavity was entirely removed upon the morning of the fourteenth, and the gradual rise in the temperature from the fourteenth to the nineteenth would suggest that retained puriform material might have been the cause of the temperature.

Pathological report: A large pus tube which had ruptured in the course of typhoid fever. The walls of the tube were covered with exudation and upon microscopical examination showed a fibrous structure with a general round-cell infiltration. Diagnosis, chronic salpingitis.— W. F. WHITNEY, M.D

The bacteriological report, by Dr. Oscar Richardson, from the Clinico-Pathological Laboratory of the hospital, is as follows: The culture showed about fifty small to medium sized, round, grayish-white, glazed colonies of a bacillus like the typhoid bacillus. Sub-cultures showed the typical growths of the bacillus of typhoid fever. Widal reaction was immediately positive with blood from a known case of typhoid fever in dilution of 1-10. The bacillus is regarded as being the bacillus of typhoid fever.

A case of pyosalpinx is referred to by Wilson, according to Fitz, and one reported by Mabit [18] (1893). In neither of these latter two cases was a bacteriological examination made. These are the only cases of pyosalpinx complicating typhoid fever I can find recorded.

Doubtless some relapses in typhoid cases are due to recent infections of the gall bladder, to impending perforations of the gut or to infections of old pus sacs and ovarian cysts.

The surgeon, before operating upon a suspected typhoid perforation, should examine the pelvis of female patients and should consider, as possibly present, the lesions thus far recorded as complicating the diagnosis.

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[15] *Ibid.*, 1900.
[16] Glasgow Med. Jour., vol. xlvi, p. 114, Feb., 1897.
[17] BOSTON MED. AND SURG. JOUR., July 20, 1905.
[18] Nouvelles Archiv. d'Obstet. et de la Gynecol., 1893.

PERFORATING TYPHOID ULCERS.*

BY FARRAR COBB, M.D., BOSTON,
Surgeon to Out-patients, Massachusetts General Hospital.

I HAVE been very much interested in Dr. Harte's complete and thorough paper, and what I have to say can add little, if anything, to what he has said and can only serve to emphasize his conclusions. I have studied, however, the cases operated upon at the Massachusetts General Hospital in the last ten years, and the analysis of these cases may be of interest to Dr. Harte and the members present.

In the early part of the year 1900 a committee from the Boston Society for Medical Improvement, consisting of Dr. George B. Shattuck, Dr. John Collins Warren and myself, made a careful study of all the cases of perforation in typhoid between the years 1895 and 1900 at the Massachusetts General Hospital, the Boston City Hospital, the Children's Hospital and St. Elizabeth's Hospital. It was my privilege to read the report of this committee at a meeting of the society.

Since I was asked to take part in the discussion of Dr. Harte's paper, I have studied all the cases of perforation in typhoid at the Massachusetts General Hospital, both those operated upon and those not operated upon, between the years 1896 and 1906. My chief purpose in doing so was to see whether the new series of cases, the majority of which occurred in the years after the report of the Improvement Society was published, would give any new information as to diagnosis and treatment, or change in any way the conclusions made in this previous report.

Of the twenty cases operated upon at the Massachusetts General Hospital between 1896 and 1906, eight cases were included in the report of the Improvement Society; the other twelve are new cases. The important conclusions of the paper read in 1900 were as follows: certain typhoids are so sick that perforation and spreading peritoneal infection cannot be diagnosed until widespread and of fatal extent. A number of typhoids may have sudden perforation with free extravasation; in these the symptoms are fulminant, but at first in some cases may be localized to a certain extent; in these cases operation must be done at once, for general peritoneal infection can become past relief in from one to five hours. In the majority of mild typhoids, beginning peritoneal infection, whether from actual perforation or necrosis of the intestinal wall, is marked by less severe warning symptoms, localized abdominal pain, tenderness, muscle spasm, with or without leucocytosis; the severe symptoms following mean general peritonitis. These warning symptoms demand serious consideration and study, but in many cases are not rightly understood or not acted upon. Complaint of abdominal pain in a typhoid should also lead to a suspicion of beginning peritoneal infection. Frequent leucocyte counts are needed in every case, and an hourly count is recommended in the presence of abdominal pain. Pain associated with localized tenderness, muscle spasm and a rising white blood count points in most cases to an operation, in all cases to a surgical consultation.

In the light of my recent study I see no reason to change the conclusions of seven years ago, with the following exception: leucocytosis, if present, may give valuable corroborative evidence, but operation should be done where there is pain and localized tenderness and muscle spasm, whether or not there is leucocytosis. The presence of leucocytosis, especially the demonstration

* Read at the meeting of the Surgical Section, Suffolk District Medical Society, in conjunction with Boston Medical Library, March 13, 1907.

of a wave of leucocytosis, is a valuable aid; the absence is of no significance. The estimation of the percentage of polynuclear cells, as advocated by Gibson, may in future be of decided value. It certainly should be obtained in all cases.

ANALYSIS OF TWENTY CASES OF TYPHOID PERFORATION TREATED BY OPERATION AT THE MASSACHUSETTS GENERAL HOSPITAL FROM 1896 TO 1906.

In addition there were three cases operated on under a mistaken diagnosis. Two of the twenty cases were operated upon by myself. Six cases recovered, 30%. This percentage of recoveries is considerably larger than in the series reported in 1900. In that series, even if one case that died of hemorrhage on the fifth day after operation were called a recovery, the percentage of recoveries would be only 19%; without this case only three cases out of twenty-one recovered, or 14.3%. In the present series, if the case that lived eleven days and died of intestinal obstruction were called a recovery from typhoid perforation, there would be seven recoveries out of twenty operations, or 35%.

Sex and age. — All the cases were males and all white persons. Thirteen cases were under thirty years of age, three cases under twelve years. Only two cases were over forty years. There were two boys nine years old and one man sixty years old. The ages of the cases that recovered are as follows: two boys nine years old, two young adults nineteen years old, a man forty and one forty-five years old. That is to say, two thirds of the cases that survived operation were boys and very young adults.

Character of the disease. — Three of the cases were very sick typhoids, and in each it is fair to state that perforation or spreading peritoneal infection could not have been diagnosed until already fatal in extent. The other seventeen cases were mild typhoids; three of them were ambulatory cases.

Time of perforation. — The only important thing in regard to these figures is to substantiate the fact that most perforations occur in the third week, but that it is not too early to expect it in the second week or too late in the fifth week. One of the cases in the medical wards that was not operated upon occurred in a relapse. In six cases perforation took place at the last of the second week or the beginning of the third; in seven cases at the middle or end of the third week; in three cases at the first of the fifth week, and in four cases during the fourth week. These figures are necessarily approximate, because of the necessity of fixing the beginning of the typhoid in many cases by the history given by the patient on entering the hospital.

Kind of onset: symptoms of perforation. — One case was a very sick delirious typhoid, in which a diagnosis of perforation could not have been made and in which operation was done for advanced general peritonitis. One case was an advanced general peritonitis brought into the accident room twenty-four hours after the first symptoms,—abdominal pain and vomiting. Eight cases had sudden free perforation with severe fulminating symptoms without warning. These cases were operated upon from two to eight hours after the complaint of pain, an average of six hours. Two of these cases recovered, one of which was a case of my own. On the other hand, in ten cases, or the majority of the mild cases, definite warning or premonitory symptoms and signs, complaint of abdominal pain, localized tenderness and muscle spasm, with or without leucocytosis, were noted from eight to sixty hours before operation was done; on an average of over twenty-eight hours before operation was done symptoms and signs were noted, which undoubtedly meant beginning peritoneal infection. In fifteen cases the surgeon, when called, found general rigidity and tenderness, with or without rising pulse and temperature and leucocytosis, and operated because of these. In five cases operation was decided on because of localized tenderness and spasm. In one of these five cases tenderness and muscle spasm were on the left, in four cases on the right side.

Leucocytosis. — In seven cases no white blood count was made. An isolated count was made in eight other cases at or just preceding operation. One case had high leucocytosis, 24,000; this case recovered. One case had 16,000 and one had 14,000. All but two of these cases were cases of advanced general peritonitis. The most advanced cases had the lowest count, 2,200 and 4,300. It was stated in the paper of 1900 that a single leucocyte count might be of little value as a diagnostic aid. I am of the opinion at the present time that a single count soon after severe symptoms have set in may or may not be of any value, and I also firmly believe that a low leucocyte count in any case should have no influence in preventing or postponing operation; that operation should be decided upon because of the abdominal pain and tenderness and the feeling of the abdominal muscles to the palpating hand. I think that in certain cases frequent and early leucocyte counts soon after the first symptoms appear may show a rising wave of leucocytosis, which will strongly bear out the diagnosis of perforation made because of other physical signs and symptoms. Three operated cases and one unoperated case illustrate this wave of leucocytosis well. In one case four hourly counts showed a rise from 6,800 to 14,000. In another case three hourly counts, from 4,200 to 10,000. In the case which was not operated upon three leucocyte counts in seven hours showed a rise from 11,000 to 26,000. In no case was the relative proportion of polynuclear cells studied.

Intestinal hemorrhage. — In two cases the records note intestinal hemorrhage for at least two or three days before operation.

Temperature and pulse. — In the majority of cases the temperature was recorded as rising. In only five cases was there a drop in temperature at the onset of severe symptoms and in only two did the temperature fall to normal or below. In all the cases the pulse increased rapidly in rate. A chill

was noted at the onset of severe symptoms in only two cases. Vomiting was recorded in eight cases.

Peritonitis. — Widespread general peritonitis was found at operation in all but seven cases. In these seven cases there was some turbid fluid and injection of the intestines localized to the neighborhood of the perforation. In thirteen cases there was no record of cultures taken. In the seven cases in which cultures were recorded the organism found was the colon bacillus. No attempt was made to isolate the bacillus typhosus by cover slip method.

Site and character of the perforation. — In nineteen cases the site of the perforation was in the ileum. In one case it was said to be high up in the jejunum. In one case the perforation was in the ileum four feet from the cecum; in most of the cases it was under twelve inches from the cecum. The size is given, varying from a pin-head to a quarter of an inch in diameter. In two cases necrotic gangrenous patches without gross perforation were the cause of the peritoneal infection. One of these cases died, the other recovered.

Anesthesia. — In one case cocaine was used, followed by ether. In three cases gas and ether were used. In sixteen cases ether alone was used.

Incision. — The cases were about equally divided between incision through the right rectus muscle and median incision.

Search for additional perforations. — Deliberate search for additional perforations was recorded as made in six cases. In only one case was a second perforation found. A second perforation was the cause of death in one of the cases, as found post-mortem. On one of the cases time was taken to invert six thin areas of intestinal wall after the actual perforation had been treated.

Method of closure of perforation. — In two cases a purse-string suture of silk was used. One of these cases recovered. In seventeen of the cases the perforation was closed with single or double rows of silk sutures. In one case which came to autopsy the question was raised whether the cause of death was not largely due to intestinal obstruction, because of excessive inversion of the intestinal wall by two rows of stitches. In one case it is interesting to note that no attempt was made to suture the perforation, but a Mixter glass tube was tied in. This was the case in which six thin areas of intestinal wall were inverted. This case resulted fatally.

Irrigation and drainage. — Only one case was sewed up tight; this case died. Drainage was used in nineteen cases. In the majority of instances cigarette drains were used, but in two or three cases rubber or glass tubes were used in addition. In four cases no irrigation was done; one of these cases recovered.

Analysis of results. — Six cases recovered, 30%. One case lived eleven days and died from intestinal obstruction, caused by fibrous adhesions. Four cases lived from three to eight days, dying eventually from general peritonitis. In one of these a second perforation was found post-mortem. Three cases died in from half an hour to ten hours, the cause of death being largely due to shock of operation. The remaining seven cases died within forty-eight hours of general peritonitis.

This study has emphasized the conclusion that in many cases the warning or earliest symptoms and signs of typhoid perforation, which mark the period when operation could be done with the greatest chance of saving life, are not recognized as sufficiently important by many physicians and surgeons. The most important thing that the discussion of this subject could bring about would be to make men realize that if operation is delayed until the signs and symptoms of severe general peritonitis are present, the result of the operation will usually be fatal, and to realize that in the majority of cases perforation or localized peritoneal infection through necrotic areas of the peritoneum is a somewhat gradual process and that there are definite typical, often localized, signs and symptoms, and when these appear operation should be done without delay; that complaint of abdominal pain by a mild typhoid almost always means a beginning infection.

THE SO-CALLED "OCHSNER MUSCLE" OF THE DUODENUM.

BY WALTER M. BOOTHBY, A.M., M.D., BOSTON,
From the Anatomical Department of the Harvard Medical School.

IN 1905, before the American Surgical Association, Ochsner called attention to what he considered an hitherto undescribed sphincter of the duodenum, situated at from 2 to 4 cm. below the entrance of the common duct. Again, in July, 1907, through the *American Journal of Medical Sciences*, he published some further observations.

A careful study of his two articles led me to believe that there was still legitimate doubt as to the existence of any such sphincter muscles as he described, and for the purpose of definitely proving or disproving its existence, I undertook the following investigation:

(1) Through the courtesy of Professor Dwight, of the Harvard Medical School, I was given opportunity to examine intestines of the subjects of the first and fourth year classes of anatomy. I examined twenty-five in all. In none could I demonstrate macroscopically the existence of any sphincter muscle; by palpation thickenings of the wall could be demonstrated, but in every instance this thickening could be accounted for by the irregularities of the mucous membrane.

(2) Six duodena were carefully removed and hardened in 60% alcohol. The serous covering was carefully dissected off. By this method it was seen that the number of the muscle fibers, both longitudinal and circular, varied slightly in places, but no increase of fibers sufficient to be deserving of especial designation as a sphincter muscle was noted. Further, in the whole study of the thickness of the muscle wall, due allowance must be made for the degree of contraction or expansion of the longitudinal fibers at different points, causing variations in thickening of circular fibers at the time of death.

(3) For the purpose of more accurate estima-

tion of the thickness of the muscle layers, I had prepared for me, by Mr. Morris, the technician in the laboratory of surgical pathology at the Harvard Medical School, a series of microscopical sections of twelve duodena obtained, through the courtesy of Dr. F. B. Mallory, from the autopsies at the Boston City Hospital. The duodena were hardened in Zenker. Each duodenum was carefully and evenly cut along the middle of the greater curvature and divided into ten blocks, from which sections were made and stained with methylene blue and eosin. This gave a cross section of the circular and longitudinal section of the longitudinal muscular fibers throughout the whole extent of the duodenum from just above the pylorus to one inch below its termination.

In these sections no general uniform increase in number of the circular muscle fibers could be demonstrated such as would constitute a permanent sphincter muscle. As will be seen by referring to detailed measurements of two of these, which I give below, there is more or less irregularity in the thickness; this irregularity is slight as compared with the average thickness of the duodenum and insignificant in comparison with the true sphincter at the pylorus. I have made a few sections lower down in the intestinal tract, which show this same fractional variation. The second duodenum detailed below is of special interest. Dr. F. B. Lund was present at the autopsy. He remarked, while operating on the patient some four weeks before, that the duodenum was markedly distended and at the time spoke of the possibility of the "Ochsner muscle" causing a constriction; as will be seen the thickness though irregular forms no sphincter muscle.

Duodenum No. 1.

Boston City Hospital Autopsy Records, A-07.38.

		Units.*
SECT. 1.	Widest part of sphincter pylori,	= 24.0
	Beginning of duodenum, 1.9, 2.0, 2.1. average	= 2.0
SECT. 2.	At different places: 2.1, 2.2, 3.0, 2.2, "	= 2.4
SECT. 3.	At different places: 2.3, 3.0, 2.8, 2.5, 2.6, 2.3, "	= 2.6
SECT. 4.	At different places: 2.5, 2.5, 2.5, 3.0, 3.2, 3.2, "	= 2.8
SECT. 5.	At different places: 3.0, 3.2, 2.5 (evidently cut on slant), "	= 3.2
SECT. 6.	At different places: 2.6, 2.8, 2.6, 3.2, 2.8, "	= 2.8
SECT. 7.	At different places: 3.0, 2.9, 3.2, 2.5, 3.2, 2.3, 2.8, "	= 2.8
SECT. 8.	At different places: 2.2, 2.8, 3.0, 2.8, "	= 2.7
SECT. 9.	At different places: 2.8, 2.0, 2.4, 2.3, 3.0, 2.4, 2.4, "	= 2.5
SECT. 10.	At different places: 2.0, 2.3, 2.2, 1.9, 2.6, 3.2, 3.2, 3.2, 3.0, "	= 2.6

Duodenum No. 2.

Boston City Hospital Autopsy Records, A-07.38.

		Units.
SECT. 1.	Widest part of sphincter pylori,	= 35.0
	Beginning of duodenum: 5.5, 6.0, 5.8, 4.5, average	= 5.4
SECT. 2.	At different places, 4.0, 5.0, 7.0, 7.0, 6.5, 7.0, 5.0, 4.2, "	= 5.7
SECT. 3.	At different places: 3.5, 3.8, "	= 3.8
SECT. 4.	At different places: 4.3, 4.1, 3.3, "	= 3.8
SECT. 5.	At different places: 4.6, 4.2, 3.0, 3.2, 3.8, 5.0, 3.7, 4.2, 4.7, "	= 4.0
SECT. 6.	At different places: 4.7, 4.2, 4.2, 4.0, 4.4, 5.0, 4.4, 4.0, 3.0 3.0, 3.2, "	= 4.0
SECT. 7.	At different places: 3.0, 3.6, 3.0, 5.4, 5.0, 5.3, 5.2, 4.8, 5.0, "	= 4.4
SECT. 8.	At different places: 5.3, 5.4, 6.0, 5.0, 5.5, 4.5, 4.5, "	= 5.1
SECT. 9.	At different places: 5.7, 5.2, 6.0, 6.2, 5.0, 6.0, 6.3, 6.0, 6.5, 7.5, "	= 5.9
SECT. 10.	At different places: 5.0, 3.6, 4.8, 3.6, 4.7, 4.8, 5.2, 5.5, "	= 4.7

* For measurement an ocular mem. was used, therefore thickness could not be expressed in mm.

CONCLUSION.

The musculature of the duodenum (especially the circular layer) presents certain irregularities in its thickness; these irregularities are slight as compared with the average thickness of the muscle, and, compared to a true sphincter, the pylorus, are insignificant. In short, I found no grouping of circular fibers in the duodenum which could be considered an anatomical sphincter muscle, though undoubtedly there are moderate variations in the thickness.

Reports of Societies.

MAINE MEDICAL ASSOCIATION.

THE fifty-fifth annual meeting of the Maine Medical Association was held in Lewiston, June 12 and 13. The meetings of the Association have been held annually in Portland for many years, with the exception of a meeting held in Bangor, about ten years ago, but the attendance was large and the sessions well conducted. The papers read, while fewer in number than has been customary, were of rather unusual merit and interest, with discussions that were free and at times bordered on sharpness.

The morning session of the first day was called to order by the president, Dr. C. E. Williams, of Auburn.

Prayer was offered by the Rev. I. C. Fostin, of Trinity Church, Lewiston.

The treasurer, DR. A. S. GILSON, of Portland, read his report, which was referred to an auditing committee.

It was voted that the reading of the secretary's report be omitted.

DR. WALTER E. TOBIE, of Portland, was appointed official reporter.

It was voted to receive and publish in the Transactions, the reports of visitors to the Medical School of Maine, visitors to the Maine Insane Hospital and visitors to the Eastern Maine Insane Hospital.

DR. JOHN A. DONOVAN, of Lewiston, presented a paper on

INGUINAL HERNIA,

which was read by DR. JOHN STURGIS, of Auburn. Dr. Donovan emphasized the following important facts: That hernia operations to-day are not as difficult as formerly, since the patient comes to operation earlier. That high ligation of the sac is an important step and that transplanting the cord adds relatively little to the value of the Bassini operation, except in obese individuals, with large herniæ.

DR. EDWIN F. PIERCE, of Lewiston, read a paper on

VENTRAL HERNIA,

in which he reported three cases which he believed died of post-operative intestinal paresis. In these cases a vertical incision was employed upward from

the umbilicus and Dr. Pierce believes that the cutting of the terminal filaments of the anterior divisions of the thoracic nerves caused paresis of the intestines through their connection with the sympathetic supply of the intestines. He stated further: "I believe that the superiority claimed for the transverse incision and the transverse suturing of the abdominal wall as practiced by the Mayos and some other surgeons in operating for ventral herniæ above the umbilicus, is due not so much to a lessening of suture tension and intra-abdominal pressure as to a lessening of nerve interference."

DR. STEPHEN H. WEEKS, of Portland, commended Dr. Pierce for reporting unfavorable cases. He favored the longitudinal incision, cutting out the indurated edges and closing in the manner giving the least tension. He expressed his belief that when death occurs it is usually the result of surgical sepsis.

DR. JOHN STURGIS, of Auburn, felt sure that death was not due to sepsis in the cases reported by Dr. Pierce.

DR. ADDISON S. THAYER, of Portland, read the

REPORT OF THE COMMITTEE ON LAWS RELATIVE TO THE COMMITMENT OF THE INSANE

as follows:

Your Committee on Laws Relating to the Commitment of the Insane, appointed five years ago, to consider and to act upon changes recommended by your president, has reported progress from year to year, and now has the happiness to report a result.

The legislature of 1907 enacted into law the Commitment Bill, exactly as printed in the Transactions of this Association, except for the following single addition: "Nothing herein contained shall require a judge of probate to appoint a hearing for the purpose of this act in any town other than the shire town of the county or the town in which said person resides."

The bill now stands as Chapter 50 of the Public Laws of the State of Maine, passed by the seventy-third legislature. The new law enables the friends of an insane person to secure legal commitment, either through action by a municipal board, as heretofore, or through action by a judge of probate.

A full history of this statute — how it was suggested, considered, drafted, revised, introduced, debated, rejected, re-introduced, opposed, re-considered and finally adopted — would be a record of contention, unlikely to stimulate or encourage effort for the betterment of our laws. Your committee is impressed by the wisdom of a conservative hesitancy on the part of this Association in all matters which involve political activity.

Your committee requests that it be discharged.

Respectfully submitted,

ADDISON S. THAYER.
D. A. ROBINSON.
O. C. S. DAVIS.

DR. S. J. BASSFORD, of Portland, read a paper on

INFANTILE PARALYSIS WITH SPECIAL REFERENCE TO TREATMENT IN THE EARLY STAGES BY STATIC ELECTRICITY.

DR. ESTES NICHOLS, director of the Maine State Sanatorium, at Hebron, read a paper on the

DIAGNOSIS, PROGNOSIS AND CONTROL OF PULMONARY TUBERCULOSIS.

Dr. Nichols said that a large number of persons who are regarded as being generally delicate, in reality suffer from tuberculosis in a latent form, needing only some acute infectious disease to light it up. Significant symptoms of early tuberculosis are slow convalescence from acute infectious disease, ill looks, loss of weight, tachycardia, slight elevation of temperature, slight but persistent cough, streaked hemoptysis, pleurisy, asthma and other symptoms and affections.

Dr. Nichols advocated as important prophylactic measures, the care of the sputum, disinfection of rooms and houses and the detection and weeding out of tuberculous cows. He believed the great dissemination of tuberculosis to be the advanced tuberculosis patient, and urged that physicians bring to the attention of municipal anthorities the necessity of establishing hospitals for incurables and maintaining the district nursing plan.

DR. S. H. WEEKS spoke of the great need of more money to carry on the work of suppressing tuberculosis.

DR. WALTER E. TOBIE, chairman of the Portland Board of Health, told how the board had urged the need of a segregation hospital before two city governments and had finally secured a $2,000 appropriation for general tuberculosis work. A municipal tuberculosis nurse had been engaged and the work of education begun, and although every physician in Portland had been politely requested to report their cases, in three months' time but twelve had been so reported, and four of these by medical members of the Health Board. This in a city of 55,000 inhabitants and in a state where a statute exists making compulsory the reporting of these cases. Dr. Tobie spoke of the tuberculin test as enforced by the Portland Board of Health, making compulsory the testing of all cows whose milk entered Portland.

FIRST DAY, AFTERNOON SESSION.

The session was called to order at 2.15 by the president, DR. E. C. WILLIAMS.

DR. FREDERIC H. GERRISH, of Portland, assumed the chair, while the president delivered his address.

DR. WILLIAMS said in part: "The numerous hospitals springing up in all sections, notwithstanding their objectionable features, are of incalculable benefit in the general uplifting of the medical profession. Not alone is surgical skill being markedly increased, but medical and surgical diagnosis is being rapidly advanced. These hospitals are not only educating those officially connected with them; but, being easily reached, physicians and surgeons from outlying towns are bringing patients to them for diagnosis, in which they participate, and for treatment, which they observe, and whether they concur or differ, the mental stimulus is the same. . . . Each man who has an assured living practice, for his own sake and for the sake of his professional brethren, should fix his fees with regard to the value of the service rendered, rather than to attract patients by underbidding his associates. By adopting this simple rule the whole problem of compensation for professional services would be solved and all would be benefited."

Dr. Williams thought that contract practice might properly be relegated to the young physician struggling for a foothold, and for him only as a temporary expedient. He urged that the profession take a solid stand on the insurance question and favored the five-dollar fee for examination. He recommended that a committee be appointed to appear before the next legislature and endeavor to secure legislation to prevent the abuse of medical charity by hospitals.

The Association voted thanks to the president, and a committee was appointed to consider the recommendations made in his address, consisting of Drs. D. A. Robinson, of Bangor, Wm. Lewis Cousins, of Portland, and B. F. Sturgis, of Auburn.

DR. EDW. M. FULLER reported as delegate to the American Medical Association.

A nominating committee was appointed, consisting of Drs. E. G. Abbott, of Portland; Owen Smith, Portland; H. H. Cleveland, Auburn; B. L. Bryant, Bangor; Eben Marston, Bath.

DR. MIAH B. SULLIVAN, of Dover, N. H., read a paper on

ACCIDENTS AND INJURIES AND SOME OF THE MEDICO-LEGAL QUESTIONS ATTENDING THEM.

Dr. Sullivan spoke of the liability to error with special reference to nervous affections and malingering. He said in part: "We are all liable to error in the diagnosis of these symptoms of nervous conditions, but more prone to error if we espouse the cause of the plaintiff or defendant too strongly, thus insidiously leading us astray. If called upon to make a medico-legal examination, it should be made as judiciously as though it was a private individual coming to consult us; and if, after careful examination and analysis, our opinion is not one that could be brought out successfully in court, to the advantage of the plaintiff or defendant, drop from the case if the truth is not desired rather than publicly swear to a statement that can be successfully torn to pieces by another and calling down upon the medical profession the ridicule of the attorney and even of the judge." There can be no doubt that opinions may differ broadly regarding the diagnosis and prognosis in the various forms of traumatic lesion to the nervous system, so there will always be grounds for honest differences in opinion. The legal profession is inclined to consider it a huge joke to hear these radical differences of opinion between medical men, yet hardly a day passes that legal opinions are not properly reversed by the highest courts in the land.

"While it must be difficult for the medical witnesses for plaintiff and defendant to agree on every point, yet it seems to me that a joint examination followed by a fair discussion of the case would leave us in much better standing before court and jury on being summoned to the witness stand, and leave out some of the unfavorable comments on medical witnesses." "A bill has recently been introduced in the Maine Legislature, I understand by the Eminent Chief Justice Emery, of this state, that covers the questions of medical evidence in an excellent manner and if it becomes the law of the state, it will be an object lesson to the law makers of other states and will be adopted undoubtedly by them."

DR. G. H. WEEKS thought that opposing medical counsel might meet and agree and thus present a better appearance in court.

DR. GORDON said that he was surgeon for the Maine Central Railroad and saw many of these cases. The attending surgeon on an accident case should not cheat himself, but should hold a conscientious belief. He advised medical men not to let lawyers own them.

DR. JOHN STURGIS said that he had been connected with a case against the Maine Central Railroad, where he believed disease existed and that the corporation surgeon was entirely wrong. That was ten months ago and he now has the proof in an ankylosed joint. We should not let a corporation own us any more than we should let a lawyer.

DR. PHIPPS, of Gorham, N. H., agreed with Dr. Weeks that opposing medical experts should meet and confer.

DR. ADDISON S. THAYER, of Portland, felt that Chief Justice Emery's plan was a great advance over present methods and that in time something of the sort would be adopted. The idea is for a judge, after consulting both sides, to appoint a competent medical expert to determine the merits of the case. It simplifies matters, reduces expenses and prevents clouding the minds of the jury. It is better than the one and only test we now have for sanity.

DR. BIGELOW T. SANBORN said that the difficulty in Dr. Weeks's plan was that the legal counsel for or against would object to a conference of the medical counsel, and if they did so meet might dispense with their services.

DR. T. L. DICKERSON, of Houlton, said that the trouble with a conference of medical men was that the master mind was likely to prevail, and legal counsel would not take the chances of having their experts' minds swerved by that of the opposing expert.

DR. FREDERIC H. GERRISH, of Portland, said that he was not mercenary, but that he objected to serving as a medical expert for a *per diem* fee many times less than his services would command elsewhere. We should not be robbed by the state. He cited an instance where a surgeon, perhaps the best in the state, had his fee cut down by a chief justice to twenty-five dollars a day.

DR. A. J. BRADBURY, of Oldtown, read a paper on

PNEUMONIA TREATMENT IN COUNTRY PRACTICE.

On motion of Dr. Walter E. Tobie the paragraph in the By-Laws, which stated that *Transactions* should not be sent to members in arrears, was changed, so that each member receives the *Transactions* as soon as published.

DR. W. P. GIDDINGS, of Gardiner, read a paper on

BODY AND MIND WITH INCIDENTAL REFERENCE TO THE LAW OF HEREDITY.

DR. B. L. BRYANT, of Bangor, read a paper on the

RATIONAL TREATMENT OF NERVOUS DISEASES.

DR. ADDISON S. THAYER, of Portland, read a paper on

PSYCHO-THERAPY.

The three papers constituted a symposium on nervous diseases and were discussed in common.

DR. CHAS. B. WITHERLE said, as regards Psycho-therapy, that we must first exclude organic disease and study each individual case. This kind of treatment requires more time than the busy practitioner can afford to give to it. He did not believe that psycho-therapy must necessarily presuppose sanity, but that it was useful in border-line cases and curable insanity.

DR. M. M. JOHNSON, of Hartford, Conn., spoke of the value of psycho-therapy and said that it should not be allowed to drift into the hands of quacks. It must certainly fail in organic diseases.

DR. E. E. HOLT said that we should have case records kept of all scholars from the time of their entering school. Such records would be of great value to assist in our analysis of the human race.

DR. JOHN J. GEHRING, of Bethel, said that he was pleased that general recognition had come, though tardily, to the branch of therapeutics advocated in this Association fifteen years ago by Dr. F. H. Gerrish. Dr. Gehring also said that he desired to add his practical testimony to the value of hypnotism as a therapeutic agent and believed it a useful agent for the physicians' employment. Suggestion is the factor that many cults employ and should be adopted by intelligent and scientific physicians.

DR. ALFRED MITCHELL said that, while all physicians help invalids and lighten their existence by their mental influence, he had an inwrought prejudice against the occult, mysterious and unfathomable.

DR. F. H. GERRISH said that hypnotism had been criticised and by implication, at least, branded as dishonest. He believed it fully as honest as the Dubois method, scientific and worthy of adoption.

DR. ADDISON S. THAYER said that Dr. Gerrish had

shown forcibly the power of hypnotism, but that it was not available for most practitioners. He did not consider it dishonest.

DR. JOHN H. ALLEN, of Portland, read a paper on

DIAGNOSIS AND EARLY TREATMENT OF MASTOIDITIS.

Dr. Allen emphasized the following points:

1. That mastoiditis is very largely a preventable disease.

2. That in order to abort it, it must be recognized and treated at an early stage.

3. That such treatment must often be instituted, if at all, by the general practitioner.

Dr. Allen advocated early incision of the tympanic membrane and dwelt upon the importance of conserving the hearing function.

DR. D. A. ROBINSON, of Bangor, reported for the Committee on President's Address and advised that a Committee on the Abuse of Medical Charity and a Committee on Reorganization be appointed.

DR. J. W. BERDE, of Auburn, reported for the Committee on Resolutions on the Death of Dr. Alonzo Garcelon. Dr. Garcelon was a charter member of the Association and the last to pass away. He was also a charter member of the American Medical Association, and was a regular attendant at the meetings of both bodies up to the time of his death.

DRS. WALLACE K. OAKES, of Auburn, and D. A. ROBINSON, of Bangor, both read papers on

EXTRA-UTERINE PREGNANCY.

The following officers and committees were elected and appointed: President, Dr. B. B. Foster, Portland; 1st Vice-President, Dr. Alfred D. Sawyer, Ft. Fairfield; 2d Vice-President, Dr. O. C. S. Davies, Augusta; Secretary, Dr. Walter E. Tobie, 3 Deering St., Portland; Treasurer, Dr. Arthur S. Gilson, 117 State St., Portland. Censors, Drs. B. L. Bryant, Bangor; J. D. Cochrane, Saco; G. A. Pudor, Portland; W. L. Haskell, Lewiston; H. L. Bartlett, Norway. Publication Committee, Drs. Walter E. Tobie (*ex-officio*), Portland; Stanley P. Warren, Portland; John H. Allen, Portland; Edwin J. Gehring, Portland; Chas. H. Hunt, Portland. Necrologist, Dr. H. F. Twitchell, Portland. Business Committee, Drs. D. A. Robinson, Bangor; B. L. Bryant, Bangor. Entertainment Committee, Drs. E. B. Sanger, Bangor; Chas. H. Burgess, Bangor. Committee on Hospital Abuse, Drs. B. L. Bryant, Bangor; A. H. Sturtevant, Augusta; H. H. Cleveland, Auburn; H. B. Palmer, Farmington; Hiram Hunt, Greenville; B. F. Bradbury, Norway.

The Board of Censors voted that the next annual meeting be held in Bangor, June 10 and 11, 1908.

Thursday evening the annual banquet was held and the annual oration delivered by Dr. WM. T. COUNCILMAN, on the subject of

TUMORS.

Dr. Councilman's oration was illustrated by stereopticon pictures and was of intense interest.

The closing session was held in New Odd Fellows Hall, Auburn, Thursday evening, June 13, immediately following the annual banquet. Dr. D. A. Robinson, of Bangor, presented to the Association a proposed new Constitution and By-Laws to be voted on, at the next annual meeting. This is the same Constitution proposed by a Re-organization Committee in 1905 and voted down by the Association in 1906. For a number of years the American Medical Association has made efforts to have the Maine Medical Association adopt its plan of organization for state societies, and the proposed Constitution is modeled on lines approved by the national body. According to the present Constitution any change requires presentation at an annual meeting, publication in the *Tranactions* and notification to each member before the next annual meeting, at which time a two-thirds vote will secure the desired change. Maine, Massachusetts and Virginia are the three states that have not adopted the American Medical Association plan, but have preferred to cling to their present Constitutions. The attitude of those who oppose the change in the Maine Medical Association is not one of hostility to the national body and, in fact, most of those who prominently urge that the present Constitution be retained are members of the American Medical Association. The outcome of the Bangor meeting will doubtless be watched with interest.

RHODE ISLAND MEDICAL SOCIETY.

THE ninety-sixth annual meeting of the Rhode Island Medical Society was held in Providence, June 13, 1907.

The president, DR. C. F. BARKER, of Newport, presided.

The House of Delegates elected the following officers for the ensuing year: President, Dr. C. V. Chapin; First Vice-President, Dr. Frank B. Fuller; Second Vice-President, Dr. Eugene Kingman; Secretary, Dr. S. A. Welch; Treasurer, Dr. George S. Matthews. Committee on Arrangements, Drs. P. Williams, W. B. Cutts, J. B. Ferguson. Committee on Publication, Drs. G. D. Hersey, C. M. Godding, G. T. Swarts. Committee on Library, Drs. H. G. Miller, G. D. Hersey, G. W. Porter, G. L. Collins, F. L. Day. Committee on Necrology, Drs. H. C. Putnam, E. B. Harvey, L. F. C. Garvin. Committee on Legislation, Drs. G. T. Swarts, W. F. Gleason, W. L. Munro, C. V. Chapin, S. A. Welch. Curator, Dr. W. J. McCaw. Auditor, Dr. Jay Perkins.

Announcement was also made of the appointments by the president, as follows: Committee on Building, Drs. H. G. Miller, J. W. Mitchell, R. F. Noyes, F. H. Peckham, F. T. Rogers; Medical Education (member for three years), Dr. J. M. Peters; Member of national legislation committee of the American Medical Association, Dr. G. T. Swarts; member of House of Delegates of the A. M. A., Dr. John Champlin.

The commitee on contract work, through Dr. George D. Hersey, chairman, presented the following resolution, which was passed:

Resolved, That contract practice requiring a physician to attend people not in destitute circumstances, for a sum much lower than the ordinary fee, is unbusinesslike, undignified, unfair to other practitioners and derogatory to the best interests of the medical profession.

The committee has previously recommended that active measures of reform be left to the district societies.

DR. GEORGE W. PORTER, having resigned active membership, was elected an honorary member.

Announcement was made by President Barker of the deaths since the quarterly meeting in March of three members of the society: Drs. W. Frank Morrison, C. T. Gardner and Valentine Mott Francis, and of the election to membership of Dr. Edward J. Logan and Dr. Margaret S. Hardman, of Providence, and Dr. Cora G. Yates, of Pawtucket.

The trustees of the Fiske fund reported that the prize of $520 for the best essay on "Diet in Typhoid Fever" had been awarded to Dr. John Benjamin Nichols, of Washington, D. C.

For 1908 a prize of $200 is offered for the best essay on "Has Surgical Treatment Lessened the Mortality of Appendicitis?"

For 1909 a prize of $200 is offered for the best essay on "The Mode of Infection and the Duration of the Infectious Period in Scarlet Fever."

The trustees of the Chase-Wiggin fund reported that no essay worthy of a prize had been received. For 1908 a prize of $75 is offered for the best popular essay on "Tea and Coffee and Their Injurious Effect."

Dr. I. B. Woodward was introduced as delegate from the Massachusetts Medical Society. Dr. Woodward presented the greeting and good wishes of his society.

He described the very successful meeting of the Massachusetts Society just held, where the keynote of the addresses was the growth of unity among the physicians and between the societies.

Dr. Woodward said that the credit of originating the custom of sending delegates to other societies belonged to the Rhode Island Medical Society, who in 1862 sent the first delegates to Massachusetts. These delegates were Dr. Joseph Moran and Dr. Sylvestus Clapp. They were promptly welcomed and delegates appointed to Rhode Island and the custom has continued to this day.

Dr. Frank B. Sprague reported

TWO CASES OF FOREIGN BODY IN THE RIGHT PRIMARY BRONCHUS.

The first was a ten-ounce tack in a boy a little over four years of age. A radiograph showed the tack and also a dark mass below. The operation consisted of etherization, tracheotomy, the use of Dr. Kelly's cystoscope and extraction with long uterine forceps. Through the cystoscope the tack could be seen in the bronchus. After removal there was a discharge of seromucus, which had accumulated below the tack. Before the operation the temperature was 104°, the respiration very rapid and the pulse hardly to be counted.

In the second case an eighteen months' baby had a piece of peanut in the right bronchus. There was great dyspnea and an alarming condition. The same general method was followed as in the first case, using ether, the cystoscope and a uterine tenaculum with a part of the end broken off to hook up the peanut. In both cases there was a prompt recovery.

Dr. John Champlin read a paper on

THE BUSINESS SIDE OF THE PHYSICIAN.

Dr. John W. Keefe read a paper on

THE VALUE OF CYSTOSCOPY AND URETERAL CATHETERIZATION AS AIDS IN SURGERY.

The annual address was given by Dr. George C. Smith, of Boston, on

THE PSYCHIC FACTOR IN DISEASE.

Book Reviews.

The American Illustrated Medical Dictionary. By W. A. Dorland, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania. Third edition, revised and enlarged. Philadelphia and London: W. B. Saunders & Co. 1905.

The third edition of this excellent dictionary is similar in form and approximately the same in size as its predecessor. Naturally, with the rapid growth of medical science and its complicated terminology, the task of a lexicographer is not an easy one. Revision must be constant and painstaking. New words must continually be incorporated and obsolete ones discarded. For example, in this edition, appearing two years after the second, several hundred new terms have been defined. Many of the tables have also been amplified and improved. We have continually made practical use of this book and, although not so encyclopedic as some others, have found it eminently satisfactory.

A Text-Book on the Practice of Gynecology for Practitioners and Students. By William Easterly Ashton, M.D., LL.D., Fellow of the American Gynecological Society; Professor of Gynecology in the Medico-Chirurgical College and Gynecologist to the Medico-Chirurgical Hospital, Philadelphia, etc. With 1,057 line drawings illustrating the text by John V. Alteneder. Third edition. Philadelphia and London: W. B. Saunders Company, 1907.

This third edition of Dr. Ashton's text-book maintains the good features of the first two editions, which received favorable notice in these columns, and in addition the following revisions and additions are to be noted. The total number of pages has been increased by twenty; thirty-two illustrations have been redrawn, seventy-one have been removed and eighty-two added, making a total of eleven more illustrations in the present work. In Chapter II, the method of collecting curette scrapings has been slightly improved, and in Chapter III, the blood in relation to surgery, there are evidences of a careful revision. Chapter VIII, on constipation, has been enlarged by three pages and four drawings illustrating "Colonic Lavage." The author describes his method of irrigating the colon, consisting of placing the patient in the knee-forehead position and using a nozzle having a large flange to prevent introducing it too far into the rectum and to facilitate holding it in place during the injection. Dudley's operation for cystocele takes the place of a combination of operations previously advised. The so-called Hirst's operation for vaginismus, a plastic on the fourchette, is introduced in the chapter on diseases of the vagina. Round ligament ventro-suspension of the uterus for retroversion with nine figures illustrating it has been added to Chapter XVI and ventral suspension has been left out.

The portion devoted to inversion has been improved by describing the operation for incision of the posterior lip of the cervix to reduce chronic inversion. It is a question whether the operation for amputation of an inverted uterus found on pages 373 and 374 is an improvement. We are glad to note that this edition has a competent chapter on chorio-epithelioma with the differential diagnosis from cancer. In the chapter on operative complications, under the heading of injuries of the intestines, Moynihan's end-to-end and lateral anastomosis operations are described and figured in minute detail, the anastomosis by means of the O'Hara and Laplace forceps found in the second edition being omitted. A chapter on passive incontinence of urine with Dudley's operation for its relief has been added, also details as to the sterilization of the patient's mouth as part of the preparation for anesthesia.

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HEALTH INSPECTION IN MASSACHUSETTS.

AN important step has been taken by Massachusetts in passing a law which now becomes effective, providing systematic medical inspection throughout the state. This law, which has been persistently and vigorously furthered by his Excellency Governor Guild, should be far reaching in its effects. The situation regarding public health becomes more complicated year by year with the development of industries and the tendency toward over-crowding, both at places of daily work, and also in the regions where the poorer portions of the population live. This new law will unquestionably supplement those already in force and particularly in relation to industrial conditions. It will be remembered that the governor in his inaugural address urged a closer study of sanitary conditions of factories, and he, as well as the community at large, now has the satisfaction of seeing the plan as originally outlined put into practice.

The state has been divided into fifteen districts, and the names of those appointed to be inspectors in these various districts have recently been made public. These appointments we publish in another place. They have evidently been made with much care, and only after conference with the officers of the State Board of Health, under whose supervision they are to work. The inspectors are expected to co-operate with the local health boards, and in the matter of factory inspection they are to supersede the district police. The act requires the appointment to each of the health districts of "one practical and discreet person, learned in the science of medicine and hygiene." The salaries are fixed in relation to the territory, the number of the inhabitants, character of the industries, and the amount of time required for the proper discharge of the duties connected with the inspection. We quote paragraphs from the act, giving the duties with which the inspectors are charged:

Every state inspector of health shall inform himself respecting the sanitary condition of his district and concerning all influences dangerous to the public health or threatening to affect the same; he shall gather all information possible concerning the prevalence of tuberculosis and other diseases dangerous to the public health within his district, shall disseminate knowledge as to the best methods of preventing the spread of such disease, and shall take such steps as, after consultation with the State Board of Health and the local state authorities, shall be deemed advisable for their eradication; he shall inform himself concerning the health of all minors employed in factories within his district, and, whenever he may deem it advisable or necessary, he shall call the ill health or physical unfitness of any minor to the attention of his or her parents or employers and of the State Board of Health.

The state inspectors of health shall be under the general supervision of the State Board of Health and shall perform such duties other than those hereby imposed upon them as the said board from time to time shall determine. They shall keep a record of their proceedings and observations, shall annually make a report of the same to said board on or before the thirty-first day of October, shall from time to time furnish said board with such information as it may require touching circumstances affecting the public health in their respective districts, and shall, in every instance, where written suggestions are made by them to the local authorities, send copies of such suggestions to said board.

This comprehensive scheme will be watched with much interest by the medical profession, sanitarians and all who are interested in safeguarding the public health. That certain abuses exist is not to be questioned, nor is it to be doubted that ignorance lies at the basis of many of the unfortunate conditions underlying our industries. The inspectors have before them a difficult piece of work, but one which faithfully and tactfully performed will redound much to their credit, as well as to that of the entire State.

DERMOID CYSTS OF THE ANTERIOR MEDIASTINUM.

DERMOID cysts of the anterior mediastinum are relatively rare, although Naudrot has been able to collect fifty instances which are published in his recent thesis. Although of congenital origin, these cysts clinically develop only at the time of

puberty, and it would seem that at this period they undergo a perturbation similar to that which manifests itself in the genital apparatus and breasts of the female. They rapidly and suddenly increase in size, their evolution ceases to be latent and the symptoms make their appearance.

The personal case reported by Naudrot shows that a thymic origin may be admitted, but the question of the pathogenesis of these tumors is far from being made evident and it still remains obscure for the majority of cases. Nothing authorizes the affirmation of one pathogenic interpretation to the detriment of another, and the theories expressed are quite as numerous as they are of little precision. At the most, one may say that, in general, these tumors represent true dermoid cysts arising from an epithelial or embryonal inclusion of blastomeric origin.

The clinical evolution offers nothing of special note and is that of all neoplasms of the mediastinum in general. Usually the first symptom which appears is a sort of progressive dyspnea occurring upon exertion. This dyspnea is, in the first place, well borne by the patient, but, after a time, a gradual and increasing aggravation of the symptoms takes place. Thoracic and intercostal pains appear accompanied by paroxysmal cough. In some cases a hemoptysis precedes the attacks of coughing. The expectoration may perhaps be more characteristic when the cyst opens into a bronchus. In the first place the quantity of the matter expectorated increases and may amount to as much as a pint in twenty-four hours. At the time that rupture of the cyst takes place, a more or less profuse vomiting occurs and, if a microscopical examination of the mucous or muco-purulent liquid is made, epithelial cells will be found similar to those composing the horny layer of the skin, as well as drops of fat and cholesterin crystals.

When hair is present it is a pathognomonic sign, and this is not infrequent since, out of fifty-six cases, it has been met with nine times. When once the pocket of the cyst is opened, expectoration becomes more abundant and hemorrhages recur frequently, and the patient will slowly die from asphyxia or cachexia, or rapidly from a hemorrhage. The evolution of the affection takes from three to eight years, often interspersed with periods of remission of variable duration, followed by paroxysms frequently due to an intercurrent complication.

The diagnosis which is impossible in the beginning of the process presents, with the exception of a few infrequent cases where a characteristic expectoration at once settles the question, extreme difficulty. Nevertheless, by an attentive clinical examination, completed by a radioscopic examination, one is able at least to diagnosticate the presence of a benign tumor on account of the persistency of the good general condition of the patient and the slowness of the evolution, although an exact diagnosis of dermoid cyst of the mediastinum may be lacking.

When once the diagnosis is made, surgical interference is necessary, and the chances of a successful result may be placed at about 70 per cent.

The operation should consist in doing an extensive thoracotomy, followed by pleurotomy. If the growth is found limited and not very large, its ablation may be attempted, but when the condition of affairs is the reverse one should merely evacuate as completely as possible the dermoid cavities and treat the pocket in a manner similar to other cysts of the body which cannot be enucleated.

RELIEF OF CONSUMPTIVES.

The report of the commission to investigate measures for the relief of consumptives in Massachusetts, the appointment of which was approved June 20, 1906, is now made public as Senate Document 330. The *personnel* of this commission, with Dr. Henry P. Walcott as chairman, and Dr. Charles F. Millet as secretary, is such as to insure results and conclusions of much significance. The work has been undertaken in most systematic fashion, the various counties being considered individually from a statistical standpoint and the allotment of cases at the Massachusetts State Sanatorium tabulated with relation to their respective cities and towns. The question of appropriate available sites for hospitals for tuberculosis, the cost of such hospitals, the advisability of the Commonwealth undertaking the care and treatment of these patients, together with sections on the nature, history, means of transference and prevention of the disease, are systematically and concisely considered. A practical portion of the report is a description of the shacks which may be used for outdoor care, details regarding diet and general hygiene and other means of helping consumptive persons in whatever stage of the disease they may be. Dr. J. H. Pratt's work in the formation of so-called tuberculosis classes is commented on most favorably and it is urged that the plan, as worked out by him, be widely imitated. The commission also hopes that much will be accomplished by the appoint-

ment of state medical inspectors, which is announced in this issue of the JOURNAL. The appointment of such inspectors, the commission holds, is far more important in the warfare against disease than the building of hospitals. The suggestions given in this section of the report may well be read by the new appointees in relation with their dealing with the subject of tuberculosis, which naturally will form a large part of their work. As an appendix a directory of institutions for the treatment of tuberculosis in Boston and vicinity is given. From this list one gets a better idea, perhaps, than in any other way, of the widely extended interest which has been aroused in the ways and means of combating the disease. The pamphlet, in general, forms an admirable *résumé* of the present state of the whole tuberculosis problem in this state, and should serve as a source of the greatest encouragement to those who may look with doubt on the prospect of final extermination of the disease. Nothing could be more striking in this connection than a chart at the beginning of the report, giving in graphic form the deaths from consumption in the thirty years from 1875 to 1905.

MEDICAL NOTES.

PURCHASE OF THE ST. LOUIS COURIER OF MEDICINE. — The *Interstate Medical Journal*, published in St. Louis, announces the purchase of the St. Louis *Courier of Medicine*, a journal established in 1879, and during its existence commanding a large following throughout the West and South. This is the fourth medical journal purchased and absorbed by the *Interstate Medical Journal* during the past few years.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 17, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 32, scarlatina 39, typhoid fever 20, measles 46, tuberculosis 83, smallpox 0.

The death-rate of the reported deaths for the week ending July 17, 1907, was 14.72.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 13, 1907, was 184, against 174 the corresponding week of last year, showing an increase of 10 deaths and making the death-rate for the week 15.74. Of this number 98 were males and 86 were females; 178 were white and 6 colored; 126 were born in the United States, 49 in foreign countries and 9 unknown; 36 were of American parentage, 114 of foreign parentage and 34 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 36 cases and 5 deaths; scarlatina, 28 cases and 3 deaths; typhoid fever, 15 cases and 3 deaths; measles, 46 cases and 3 deaths; tuberculosis, 51 cases and 15 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 15, whooping cough 1, heart disease 12, bronchitis 0 and marasmus 4. There were 16 deaths from violent causes. The number of children who died under one year was 33; the number under five years, 58. The number of persons who died over sixty years of age was 37. The deaths in public institutions were 67.

There were 6 cases and 2 deaths reported from cerebrospinal meningitis during the week.

AWARD OF THE WARREN TRIENNIAL PRIZE. — The Warren prize has this year been awarded to Dr. Aldo Perroncito of the University of Pavia, Italy, for an essay entitled, "*La rigenerazione dei nervi.*"

STATE BOARD IN DENTISTRY. — As the result of a recent examination held before the Massachusetts State Board of Registration in Dentistry, 41 out of 90 applicants passed successfully.

INVESTIGATION OF TUBERCULOSIS. — The General Assembly of Connecticut has, within a few days, authorized the governor to appoint a commission of nine to investigate tuberculosis in the state and to suggest means of preventing the spread of the disease.

PHYSIOLOGY IN SECONDARY SCHOOLS. — Dr. Eugene A. Darling, of the Department of Physiology in Harvard College, last week gave a lecture before the students in the summer school on "The Teaching of Physiology in Secondary Schools." Dr. Darling urged that attention be given to the principles of physiology late in their course in secondary schools instead of at the beginning. He urged further that the course be made more comprehensive and detailed, including laboratory work.

NEW YORK.

SUMMER SCHOOLS OF THE BOARD OF EDUCATION. — The usual summer schools of the board of education were opened for a term of six weeks on July 8. The registration was 11,440 in Man-

hattan and 8,170 in the Borough of Brooklyn. In connection with these vacation schools there are 63 playgrounds, and systematic instruction in gymnastic exercises is given in them. In addition, the board has opened several other playgrounds for the special use of mothers with infants and young children, and at these trained nurses are in attendance, to give instruction in the care and feeding of babies.

A New Commissioner of Street Cleaning. — The commissioner of street cleaning, Mr. Craven, having resigned, Mayor McClellan has appointed Dr. Walter Bensel, of the Health Department, to that responsible position. Dr. Bensel, who has for some years served very efficiently as sanitary superintendent, is unwilling to take the post permanently, as its duties would interfere too much with his other work, but has accepted the appointment for the period of three months.

Public Schools for Deaf Children. — The Board of Education has authorized the establishment of a permanent public school for deaf children, the first of its kind in New York, and it is to be opened in September in the school building in East Twenty-third Street, which has until now been occupied by the Stuyvesant High School and which can accommodate nearly two hundred pupils. In the report of the committee, which led to the inauguration of this new departure, it is stated that a day school for deaf children is entirely practicable, and it is advised that lip reading and oral speech should be taught exclusively. "A careful study of class instruction in different institutions, especially of the results found in the higher grades," the report says, "has convinced us that pupils taught exclusively by the lip method make better progress, have better trained minds and have greater confidence in themselves, than those taught in whole or in part by the manual method. As individual attention is absolutely necessary in the training of the deaf, it is advised that the classes should not consist of more than ten children, and it is further recommended that industrial work should form a prominent feature in the course of instruction.

Obituaries.

SIR WILLIAM HENRY PERKIN.

In the death of Sir William Henry Perkin, which occurred July 14 in London, at the age of sixty-nine, the world loses one of its great discoverers. His early education was in London at the City of London School, said to have been the only school in the country at that time where scientific subjects were taught. While still under twenty, he acted as assistant to Dr. A. W. Hofmann of the Royal College of Chemistry, and read the results of his first research one year later. In 1856, he made the discovery which has rendered his name famous through his experiments with aniline purple or mauve. He thereafter devoted his time to the development of his new discovery, which was destined to prove far reaching in its consequences. He formed a partnership with his father and brother and the new dye was successfully manufactured in 1857 and supplied to various dealers. He later discovered several other coal tar coloring matters, and in various ways rendered practical service in the manufacture of dyestuffs. He retired from technical work in 1873. In 1856 he was elected a fellow of the Chemical Society and of the Royal Society in 1866. He became president of the Chemical Society in 1883, after holding the position of one of the honorary secretaries for many years. He was president of the Society of Chemical Industry in 1884 and in 1885, and in 1891 received the honorary degree of Doctor of Laws from St. Andrew's and from Johns Hopkins. It will be remembered that last year the fiftieth anniversary of the original discovery of aniline purple was widely celebrated, both in England and in this country, and he himself was given due honor as the man who had done more than any other toward placing chemistry on a commercial basis. In Boston, Sir William was received with much ceremony, President Pritchett of the Massachusetts Institute of Technology presiding at a dinner, which was attended by many distinguished men, and at which an elaborate punch bowl was presented him.

SIR WILLIAM HENRY BROADBENT.

The death of Sir William Henry Broadbent, physician in ordinary to King Edward and the Prince of Wales, and long associated with the English royal family in a professional capacity, died in London, June 10. He was born in Yorkshire, England, in 1835, and after a preliminary education at Huddersfield College and Owens College, Manchester, graduated in medicine from the Royal School of Medicine in the same city. After further study on the Continent, he returned to England and established a large practice in London, in addition to giving much time to hospital work, medical societies and medical writing. He was at various times president of the Harveian Society of London, the Medical Society of London, and the Clinical and Neurological societies. He was twice censor of the Royal College of Physicians of London. In 1898, at the death of Sir Richard Quain, Dr. Broadbent was made physician extraordinary to Queen Victoria. In addition to his many other honors, he was a Knight Commander of the Victorian Order, a Commander of the Legion of Honor and a Fellow of the Royal

Society. He held the honorary degree of LL.D. from St. Andrew's and Edinburgh, and that of D.S. from Leeds. His medical interests were broad, but he was chiefly known for his writings on the circulation. He was one of the best representatives of the large cultivated and learned group of physicians which England has produced.

HAMILTON OSGOOD, M.D.

DR. HAMILTON OSGOOD, who for many years was an active practitioner of medicine in Boston, died in Oxford, England, July 10, in his sixty-ninth year. He had for some time past been broken in health and his death, therefore, was not unexpected. During the latter years of his active practice Dr. Osgood had made a special study of hypnotism in the treatment of disease, and, in fact, was one of the first to enter with enthusiasm upon the practice of suggestive therapeutics when it first came into popular notice in this country. His enthusiasm in the application of such methods of treatment possibly at times carried him too far, particularly in his estimate of the efficiency of hypnotic methods. It should not, however, be forgotten that he was one of the first to see the practical bearings of psychotherapeutic methods, and however extreme he may have been in carrying out his ideas, the courage of his convictions never failed. Dr. Osgood was a man of much versatility, a wide traveler and reader, and a suggestive writer upon the topics in which he was particularly interested. He was at one time on the staff of the BOSTON MEDICAL AND SURGICAL JOURNAL. He leaves a widow and two daughters, one of whom lives in London. Memorial services were held, July 14, in Dublin, N. H.

Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
JUNE 22, 1907.

1. WILDER, W. H. *Immediate After-Treatment of Patients Operated on for Cataract.*
2. SCALES, J. W. *The Immediate After-Treatment of Cataract Operation.*
3. CALLAN, P. A. *Operations for Secondary Cataracts.*
4. *DAWES, S. L., and JACKSON, H. C. *The Physiologic Action, Elimination and Therapeutic Application of Sodium Cacodylate Used Hypodermatically.*
5. *MUEHLBERG, W., and KRAMER, S. P. *The Action of Toxic Doses of Ether and the Influence of Amyl Nitrite Thereon.*
6. LOEB, H. W. *The Anatomy of the Middle Turbinate with Special Reference to Its Topographic and Surgical Relations.*
7. GOODALE, J. L. *Pathology of the Middle Turbinate.*
8. GORDON, A. *The Localization of the Motor Area Based on Exact Faradization.*
9. *SELBY, C. D. *The Diagnosis of Perforation of the Bowel in Typhoid.*

4. Dawes and Jackson have studied the action of sodium cacodylate, both experimentally and clinically, and conclude, contrary to the results of Fraser, that the drug is not without therapeutic value. Sodium cacodylate is an organic salt containing arsenic, and has been used hypodermically since 1899 as a substitute for inorganic arsenic, but since 1903 has fallen into disuse since Fraser's article maintaining that the drug did not liberate arsenic in the system, and that it had no physiological action. Dawes and Jackson find that after the hypodermic use of the cacodylate, inorganic arsenic appears in the urine and feces as well as in the tissues. Large doses were fatal to rabbits. Clinically the drug was used in 45 cases including anemias, Hodgkin's disease, chorea and skin diseases. The results, although apparently good, are not conclusive.

5. Muehlberg and Kramer describe a number of experiments performed, and determine certain points in the physiological action of ether and chloroform upon animals. The results are of value as scientific data, the clinical bearings of which are not entirely clear. Certain findings, however, are of practical interest. Ether given intravenously was found to be more toxic than chloroform, 2 minims being fatal in medium-sized rabbits. Amyl nitrite was found to have a distinct effect in counteracting the toxic effects of ether; its use is therefore advised in patients under anesthesia, to be begun as soon as the pulse begins to weaken. No corresponding beneficial action was observed in chloroform poisoning. No evidence was obtained of cardiac stimulation by ether; the experiments, on the contrary, showed that cardiac depression followed the administration of ether. The beneficial action of subcutaneous injections of ether in cases of shock, etc., is probably due to vasomotor stimulation.

9. Selby's article is a good summary of the important symptoms and signs of intestinal perforation in typhoid fever, with a plea for more general and more prompt surgical treatment. The mortality without operation is practically 100%; with operation of the 400 cases in literature, 25% have been saved, and a higher percentage of recoveries should be possible. The symptoms and signs are mentioned in the following order: pain and tenderness; the facies of agony and apprehension; shock and sweating; temperature falling and pulse rising; blood pressure at first low but soon rising above the former level; leukocytosis appearing 1 to 6 hours after the perforation; *muscle spasm*, the most valuable physical sign; increased thoracic respiration; distention with gas in the peritoneal cavity; nausea and vomiting. The differential diagnosis must exclude: appendicitis; suppurating mesenteric glands; intestinal obstruction; intestinal hemorrhage; iliac thrombosis, cholecystitis, diaphragmatic pleurisy and pneumonia. The aim, however, should not be definite diagnosis, but the recognition of the necessity for surgical treatment, which includes several other of the conditions mentioned. Hemorrhage may cause more or less pain; the onset of symptoms, however, is less acute than in perforation, and the blood pressure is lowered. When in doubt, the decision should favor perforation. Iliac thrombosis may be recognized by tenderness in the groin. The diagnosis of perforation can best be made by the physician in regular attendance upon the case, since comparison of present condition with preceding condition is essential.

[F. W. P.]

MEDICAL RECORD.
JUNE 22, 1907.

1. *PETIT, R. *Sterilized Horse Serum in Surgery.*
2. LOOMIS, H. P. *Pyrexia in Tuberculosis. What It Tells Us and How It May Be Controlled.*
3. HEUBNER, O. *The Problem of Infant Feeding.*
4. RONGINSKY, A. J. *Some Aspects of Sterility and Its Treatment.*
5. MAHER, S. J. *What Are Acid-Fasts?*
6. BUTLER, G. F. *Remarks on the Treatment of Disease and So-called "Authorities."*
7. GORDON, A. *Abnormal Response to an Irritation of the Motor Area of the Brain.*
8. TALMEY, B. S. *A Case of Multilocular Glandular Cystoma Complicating Pregnancy.*

1. Petit in experiments made by injection of isotonic solutions into the peritoneal cavity in animals found that there was an afflux of polynuclear white blood cells to the spot of injection, and the resistance of the animal to infection was increased. He applied this fact by using sterilized horse serum as an injection, since this is the substance that produces polynucleosis most easily and usefully. After its use it was found possible to inject

lethal doses of cultures of *Bacterium coli* and *Staphylococcus pyogenes* into the serous cavities with impunity. This afflux takes place not only in the peritoneum, but also into the serous cavities, mucous membranes, and in wounds of all regions. More than a hundred cases in human beings have now been treated by injection of sterilized horse serum. In abdominal surgery of a non-septic character it has been used as a prophylactic, by pouring the serum into the cavity that has been opened, and drainage by gauze saturated with the serum. In septic cases it has been used by packing the cavity with gauze saturated with the serum, and pouring the serum into the cavity through the drain. The character of the pus changed at once; instead of a serous fluid it became thick and creamy and contained many polynuclears. Suppuration diminished rapidly and granulation began. In gynecology it was used in puerperal infections, after curetting, by packing the uterus with gauze saturated with serum, and placing dried serum in a small tampon introduced into the uterus. In phlegmonous infections and in burns it has been used, and the results have been excellent, healing being rapid. Healing and cicatrization have been obtained at once rapid and excellent; and cure has been obtained in desperate diseases. The method is one which aids the tissues in repair by putting them in a good condition for defence.

NEW YORK MEDICAL JOURNAL.
JUNE 22, 1907.

1. STUBBERT, J. E. *Sanitation in Panama.*
2. DARLINGTON, T. *President's Address before the American Climatological Association.*
3. MORROW, P. A. *Hygiene in Relation to the Heredity of Disease.*
4. *ARNEILL, J. R. *Surgical Aspects of Some Digestive Disorders from the Standpoint of the Internist.*
5. VAUGHAN, V. C., and WHEELER, M. *Experimental Immunity to Colon and Typhoid Bacilli.*
6. TALLEY, J. E. *A Case of Intermittent Claudication.*
7. OLIVER, J. *A Further Contribution Concerning Menstruation.*
8. WILE, U. J. *Anemic Infraction of the Adrenal with Thrombosis of the Veins.*

4. Arneill calls attention to the frequency with which on the one hand, diseases which surgery might relieve are treated medically to the end, and on the other hand, cases without organic disease are subjected to unwise surgery and made worse. To remedy the evils it is all important to give all possible attention to diagnosis, and where all other methods are inconclusive to resort to the exploratory incision. But when this is done and no definite cause for symptoms is found, the surgeon should refrain from operations such as gastro-enterostomy, for which there is no necessity. Cases are cited of pyloric obstruction and of hemorrhage where the results of surgical treatment were brilliant, and of gastric atony, enteroptosis, etc., where after operation the condition of the patient was no better than before. A brief description is given of the methods of diagnosis in stomach disorders, but on account of their fallibility a more common resort to the exploratory laparotomy is urged. [F. W. P.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.
JUNE, 1907.

1. *TRUDEAU, E. L. *Tuberculin Immunization in the Treatment of Pulmonary Tuberculosis.*
2. *ANDERS, J. M. *Chronic Polycythemia and Cyanosis.*
3. *BARRINGER, T. B., and ROPER, J. C. *The Prognosis of Chronic Spontaneous Glycosuria, and Its Relation to Alimentary Glycosuria.*
4. LA FETRA, L. E. *Infantile Scurvy, Its Manifestations and Diagnosis.*
5. NICOLL, A. *The Treatment of Fracture and Dislocation of the Vertebræ.*
6. CORNER, E. M. *The Most Frequent Hernia in Childhood and Its Significance.*
7. SPILLER, W. G., and CAMP, C. D. *The Clinical Resemblance of Cerebrospinal Syphilis to Disseminated Sclerosis.*
8. ORBISON, T. J. *Recurrent Facial Palsy, with Reference to Certain Etiological Factors.*
9. *COLEMAN, W., and BUXTON, B. H. *The Bacteriology of the Blood in Typhoid Fever.*
10. LOEB, L., and FLEISHER, M. S. *The Influence of Iodine Preparations on the Vascular Lesions Produced by Adrenalin.*
11. LA ROQUE, G. P. *So-Called Hysterical Affections of the Abdomen.*

1. Trudeau's article describes the work which has been done in the treatment of tuberculosis by means of tuberculin. In spite of the lack of clinical evidence that tuberculosis produces a spontaneous immunity, much experimental evidence has been accumulated to show that an artificial immunity can be produced. This immunity must be due to antitoxins, antibodies, agglutinins, bacteriolysins or opsonins, the relative importance of which is as yet unknown. The immunity is produced artificially by means of cultures or culture products of the tubercle bacillus, from Koch's old tuberculin to the newer preparations, containing dead or living tubercle bacilli, human or bovine. The regulation of the dosage is important if good is to result rather than harm. Too large doses produce obvious ill effects; too small doses may fail in efficiency. For the regulation of the dosage there is as yet no established criterion. Wright has advocated regulation by the guidance of the opsonic index, according to which the dosage is extremely small. Trudeau, on the other hand, does not regard the production of opsonins as the sole end to be aimed at, and advocates conducting the treatment by careful observation of the clinical symptoms of the case, with the object of producing a clinical immunity to the tuberculin. He begins with small doses, 1000 mgm. of B. F., or Koch's B. E., increased progressively with each dose. The injections are given at first twice a week, later at somewhat longer intervals. The treatment is continued, usually for 6 months to a year, until finally 1 cc. of the undiluted preparation causes no reaction. The injections are then discontinued, to be resumed three to six months later. Throughout the course symptoms of intolerance, consisting in febrile reactions, local reactions, either at the site of the injection or at the site of the disease, or constitutional disturbances, such as malaise, headache, anorexia, and loss of weight and strength, must be watched for. If these appear, the treatment is discontinued until they cease, and then continued with more gradually increasing doses. Trudeau's experience has been mainly with chronic cases, with temperature under 100°. Acute febrile cases, he believes, should be treated by the rest and open-air method only. The clinical value of the tuberculin treatment is difficult to determine. Trudeau gives no statistics but expresses "a strong clinical impression . . . which has gradually become a conviction," the value of which no one can deny, that tuberculin immunization favorably influences the course of chronic tuberculosis.

2. Anders discusses the condition known as chronic polycythemia, or increase in number of the red blood corpuscles with cyanosis and usually enlargement of the spleen. He reports 3 original cases and analyses 18 cases from the literature, and suggests the theory that the cause is to be found in a venous stasis resulting from defective tonus of the veins. The symptoms are variable, but headaches, vertigo and neurasthenic symptoms are prominent. In treatment, the nitrites have given benefit in some cases. Begg reports a case where quinine in large doses seemed to have a distinct beneficial effect.

3. Barringer and Roper report the results of investigations in 17 cases in whose urine five years or more ago sugar was found on examination for insurance, and who were shown by further study to have not diabetes, but transient spontaneous glycosuria. Of these cases 50% showed an alimentary glycosuria at the end of five years, and 8 of the 17 have developed diabetes or probable diabetes. The remaining 50% showed no return of the glycosuria after its original discovery. The authors conclude that there is a class of cases of spontaneous glycosuria where the condition is quite harmless, contrary to von Noorden's view that a transitory glycosuria is in most cases a sign of developing diabetes. They regard the test of alimentary glycosuria as a valuable aid in distinguishing these cases of good prognosis. Where a small quantity of sugar is found in a patient's urine without

history of over-indulgence in sweets they advise a restricted diet and frequent testing of the reaction to glucose in the next six months. If the reactions are negative and the sugar does not reappear they believe that continuance of the restricted diet is unnecessary.

9. Coleman and Buxton, since their adoption of the ox-bile method of blood-culture for typhoid bacilli, have studied 34 cases, of which 10 proved by clinical course to be conditions other than typhoid, and the remainder unquestionably were typhoid. Of the 24 cases of typhoid, the bacilli were demonstrated by blood culture in all. From this and from the fact that published results of 33 different investigators, in spite of methods now considered faulty, show positive findings in 1,197 out of 1,602 cases, and in all stages of the disease, it is thought probable that the bacilli are present in the blood of every case of typhoid fever and throughout its course. The authors do not, however, regard the disease as a septicemia, but consider that the bacillemia merely represents an overflow of bacilli from the lymphopoietic organs. The methods of preparing the media and of identifying the organisms are concisely but clearly described. The value of the test as a method of early diagnosis is shown by the fact that in 391 published cases the bacilli were found 94 times when the Widal reaction was negative. [F. W. P.]

ANNALS OF SURGERY.

JUNE, 1907.

1. *WARREN, J. C. *Plastic Resection of the Mammary Gland.*
2. *MAYO, W. J. *The Contribution of Surgery to a Better Understanding of Gastric and Duodenal Ulcer.*
3. *MUNRO, J. C. *End Results in Benign Lesions of the Stomach Surgically Treated.*
4. *COFFEY, R. C. *Remote or Indirect Subperitoneal Drainage in the Extraperitoneal Closure of Persistent Fecal Fistulæ.*
5. CHANDLER, G., and BALDAUF, L. K. *Lipoma of the Intestine in a Child with Symptoms of Intestinal Obstruction.*
6. MYER, M. W. *A Malignant Type of Pseudomyxoma Penetrating the Spleen and Colon.*
7. *MCWILLIAMS, C. A. *Primary Typhlitis without Appendicitis.*
8. *BODINE, J. A. *The Adequacy of Local Anesthesia in Inguinal Hernia Operations.*
9. MCCOSH, A. J. *Cysts of the Suprarenal Gland.*
10. *JACOBSON, N. *Toxic Nephritis Dependent upon Surgical Conditions.*
11. OSGOOD, A. T. *The Diagnosis of Obscure Cases of Renal and Ureteral Calculus.*
12. *KEYES, E. L., JR. *Tuberculosis of the Testicle.*
13. KEEN, W. W. *Fracture of the Greater Tuberosity of the Humerus, with Dislocation into the Axilla. Fracture at the Anatomical Neck of the Humerus with Dislocation.*

1. By an incision along the outer and inferior borders of the gland, Warren is able to reflect the breast inward toward the sternum, and thus gain access to tumors or cysts lying within its substance. These he removes by a V-shaped incision, without entering the cyst cavity. The remaining segments of the gland are then explored by a series of radiating incisions. Buried catgut sutures are used to unite the remaining breast tissue. This method of approach leaves a scar which in no way interferes with the subsequent cosmetic appearance of the gland. It is so placed, however, that if evidence of malignancy be found it may easily be prolonged into the usual incision for amputation of the gland with dissection of the axilla. The article is admirably illustrated.

2. Mayo calls attention to the two varieties of gastric and duodenal ulcer: (1) the indurated or calloused ulcer, which can be seen and felt during operation on account of the cicatricial tissue, which gives the appearance and feel of a scar from the outside of the stomach wall; and (2) the non-indurated, mucous ulcer which does not betray its presence by thickening or other sign, and is usually located with much difficulty, even if the stomach and duodenum be opened and careful search be made. All the positive advances in surgical knowledge concern the first group. That ulcers of the second type exist in both acute and chronic form is not to be doubted, but at the present time Mayo does not consider that a diagnosis of mucous or other undemonstrated ulcer indicates a surgical operation, unless there exist complications, such as perforation, hemorrhage or obstruction. Indurated ulcer occurs fully as often in the duodenum as in the stomach. Seventy-seven per cent of the cases of duodenal ulcer occurred in men. In 54% of the cases of cancer of the stomach, there was conclusive evidence that the cancer had its origin in ulcer. The best means of identifying the pylorus is by the pyloric vein, which extends from the inferior margin of the pylorus on the gastric side, upward and across about three fourths of its extent. From the superior margin a similar vein extends downward, until it nearly or quite meets the one from below.

3. Munro reports the results of 150 cases of benign lesions of the stomach. Eighty-seven of these showed gross ulcers in the stomach, in the duodenum, or in both; 25 showed well marked adhesions without evidence of an active ulcer; 16 cases belonged to the class of so-called medical ulcer, without palpable lesion; 15 were cases of so-called neuroses, and 9 were classed variously as ptosis, spasm of the pylorus, etc. In the majority of cases of gross lesion the benefit from operation was immediate and permanent. The "medical ulcer" cases were only very slightly or not at all benefited by operation, so that Munro advises closing the abdomen when there is no gross ulcer, pyloric obstruction, or other crippling lesion to be found. The worst subjects for interference were those classed as neurotics, most of such cases being made worse by operation.

4. Coffey employs the following procedure in the closure of fecal fistulæ: (1) Dissect out the old scar down to the fat, and make an incision around the fistulous tract, including a small strip of skin, directing the point of the knife slightly away from the fistula, so that it first comes in contact with the fascia about half an inch away from the fistula, in order to avoid any possibility of opening the peritoneum. (2) Dissect up the fat from the fascia for as much as two inches from the incision; draw it back; clean off the fascia. (3) Make an incision through the fascia, beginning at the upper end of the wound, and coming toward the fistula. Dissect the fascia from the muscle for at least two inches in every direction. (4) Dissect the muscle from the peritoneum in the same manner, so that the peritoneum hangs loosely, with the fistula standing up in its center. (5) Trim off the little margin of skin which has been left with the edge of the fistula. (6) The edges of the fistula are turned in with linen sutures knotted on the inside. (7) If the wall of the fistula is hard and cicatricial, making it difficult to turn in, it is well to make an incision part way through this cicatricial tissue. (8) A second layer of sutures is placed above the turned-in fistula, and the wound thoroughly cleaned with salt solution. (9) Silkworm gut sutures are passed through skin, fat, fascia and muscle, about a half inch or more from the edge, and left untied, space being left at the upper end of the wound for drainage. (10) Suture the muscle loosely with catgut. (11) Suture the fascia with strong double catgut. (12) Suture the skin with horsehair. (13) Place the drains, either tubes or cigarette wicks, and tie the silkworm-gut sutures over gauze rolls. The lateral spaces between the fat, fascia and muscle serve as drainage channels to conduct any septic fluid around the line of suture to the drain at the upper end of the wound. The colored illustrations accompanying the article are of value in showing the various steps.

7. McWilliams concludes as follows: (1) Primary, acute and chronic typhlitis occurs independently of appendicitis, dysentery, tuberculosis, actinomycosis or cancer, and is idiopathic in origin, or depends on coprostasis. (2) Primary typhlitis, the appendix being normal, may lead to perforation, with the formation of perityphlitic abscess or general peritonitis. (3) The symptoms of primary typhlitis are usually identical with those of appendicitis, and the indications for operation are similar in the two conditions. (4) Primary typhlitis is rare in comparison with appendicitis. (5) The danger of a primary typhlitis consists in the liability to the rupture of an ulcer, and to the development of appendicitis. (6) Purgatives are contra-indicated in inflammations of the right iliac

fossa. (7) The treatment consists of laparotomy, removal of the appendix, closure of any perforation, or invagination of any suspected spot in the cecal wall, with removal of a piece for microscopical examination if it is thought necessary.

8. Bodine, basing his statement on over 400 operations for radical cure of inguinal hernia, advocates the use of local analgesia in all such cases. He uses a 1 to 500 warm cocain solution.

10. Jacobson states that the subject of nephritis dependent upon surgical conditions located remotely from the kidneys is one to which sufficient attention has not been given by the profession. He reports three cases. In the first there was present a bacterial or toxic nephritis dependent upon a septic condition (sloughing fibroids) and associated with other evidences of profound sepsis, especially endocarditis. The patient's condition was precarious, and yet after the expulsion of the fibroids and the subsidence of the sepsis of the uterus there was at once a prompt recovery from the secondary disturbance, both in the heart and kidneys. In the second case, one of intestinal obstruction from adhesions and bands, a toxic condition was created within the intestinal tract, and as a result of this toxemia a pure toxic nephritis. After relief of the intestinal obstruction, though the patient nearly died of uremic convulsions, the nephritis gradually improved and recovery ensued. In the third case there was present pancreatitis due to cholecystitis. The resulting toxic condition caused both nephritis and glycosuria, both of which were recovered from on draining the gall bladder. These cases illustrate a type in which the bacterial or toxic nephritis, instead of being a contra-indication to operation, becomes a most positive indication for operation, as by such a course only can it be removed.

12. Keyes's paper is based on the observation of 100 patients bearing 153 tubercular testicles. He finds that (1) testicular tuberculosis is clinically never an isolated lesion. It is only one feature of a general genital tuberculosis, for (2) sterility is frequent if not constant at the time the first testis is invaded; (3) there is evidence at this time of inflammation of the internal genitals; (4) relapse in the opposite testicle occurs within a few years, in eight or nine out of ten cases, and (5) such relapse is in no wise postponed by early removal of the diseased testis; (6) moreover, though suppuration seems often to result in permanent cure of the local process, and (7) though a chronic focus several years old is likely to suppurate, yet (8) in no case can one feel certain of a real cure unless the tubercular epididymitis has been removed; (9) the demoralizing effect of epididymectomy is not to be compared with that of castration, and (10) slight tuberculosis of the testis may be depended upon to heal spontaneously after removal of the epididymis; (11) hence epididymectomy is the radical operation of choice, unless there is hyperacute generalized epididymo-orchitis, or unless the testis is destroyed by suppuration; (12) this operation has a beneficial effect upon the general health and upon tuberculosis of the internal genitals; (13) it should, therefore, be performed early in the disease; (14) this in spite of the fact that tuberculosis of the testis is often but an insignificant part of a generalized progressive tuberculosis, or (15) is for many years the only active lesion of the disease; (16) if the patient is sterile, it would probably be wise to remove both epididymes, even though only one side is diseased. [W. C. Q.]

THE LANCET.
JUNE 15, 1907.

1. WILSON, T. *Pelvic Inflammations in the Female.*
2. *EHRLICH, P. *Experimental Researches on Specific Therapeutics.*
3. *DUCKWORTH, D. *The Treatment of Cardiac Dilatation.*
4. *MUMMERY, J. P. L. *The Causes of Colitis with Special Reference to its Surgical Treatment.*
5. PRINGLE, S. *Sacrococcygeal Teratoid Tumor with Formation of Metatases in the Groin.*
6. MOULLIN, C. W. M. *Notes on a Case in which Glycosuria, Depending upon Cholecystitis and Cholangitis, Disappeared after Drainage of the Bile Ducts.*
7. MERIUR, C. *Meditations on Gout* (written during an attack).

2. Ehrlich's first lecture is a dissertation on immunity, with especial reference to the relations existing between the distribution and action of antigens and antibodies. It is as clear as this somewhat complex subject can be made.

3. For cardiac dilatation with sudden broken compensation Duckworth advises venesection of 6 to 8 oz., or leeching; next, purgation for which he considers mercury by far the best agent, then digitalis. A dry diet is very important. Tapping should be resorted to if necessary.

4. Mummery advises the use of the sigmoidoscope in all obscure cases of colitis. He reports 36 cases, and takes up the various causes of this condition, both outside and inside the intestines. For treatment, he uses irrigation with a douche, the reservoir of which is never higher than 1 to 2 ft. above the anus. In acute conditions he advises using mild non-irritating solutions. In ulcerated cases large olive oil injections are of benefit. In cases in which no cause can be found in prolonged examination, and which do not yield to careful medical treatment, he advises operative measures and a thorough examination of the intestines. [J. B. H.]

BRITISH MEDICAL JOURNAL.
JUNE 15, 1907.

1. BROADBENT, W. H. *Remarks on Some Affections of Speech.*
2. *MACKENZIE, H. *Clinical Remarks on a Case of Cerebro-spinal Meningitis, or Spotted Fever, Treated by Lumbar Puncture and Vaccine Injections: with Recovery.*
3. BLAND-SUTTON, J. *A Lecture on Circumcision as a Rite and as a Surgical Operation.*
4. MACMUNN, J. *On the Radical Cure of Urethral Stricture by Internal Urethrotomy.*
5. *COOMBS, C. *Congenital Hypotonia* (*Congenital Amyopsia*).
6. SQUIRE, J. E. *A Clinical Lecture on Opsonins in Relation to the Specific Treatment of Tuberculosis.*
7. FELKIN, H. G. *A Contribution to the Value of Complete Vocal Rest as an Aid to Recovery from Laryngeal Tuberculosis and Allied Conditions during Sanatorium Treatment.*

2. Mackenzie considers lumbar puncture of the greatest value in all forms of meningitis and thinks that he has saved several lives by this process. In the case he reports, nearly 9 oz. of fluid were obtained by nine punctures. The vaccine used in his case was prepared from the organisms obtained from culture of the fluid. While convinced of the value of lumbar puncture he is unable to state how much good was done by the use of the vaccine.

5. "Congenital hypotonia," or "myatonia congenita," is a rare condition, consisting of excessive muscular laxness and weakness. Coombs's case was in an otherwise healthy girl of ten years. The condition was present from birth, yet could not be ascribed to any hereditary cause. Unlike most muscular dystrophies, it has not occurred in any other members of the patient's family. The muscles are weak in proportion as they are small and short; there are no sensory or trophic changes, no fibrillary tremor, and no reaction of degeneration. The small size of the muscles is due not to atrophy, but to a lack of development. All the muscles in the body are implicated. There seems to be a rounding of the articular surfaces as shown by x-ray, which accounts for some of the abnormal mobility. As in myasthenia gravis there is apt to be a persistence of the thymus. Oppenheim considers the prognosis favorable. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, NO. 22.
MAY 30, 1907.

1. *UHLENHUTH, HOFFMANN and ROSCHER. *The Action of Atoxyl upon Syphilis.*
2. *SCHMORL, G. *The Staining of Sections for the Spirochaeta Pallida by the Giemsa Method.*
3. KLOSE, H. *The Use of Papayon Combined with Antitoxin in the Treatment of Laryngeal Diphtheria.* (Continued article.)

4. SUDECK, P. *Muscle Atrophy.*
5. CASSIRER and BAMBERGER. *A Case of Double Neuritis of the Crural Nerve with Pentosuria.*
6. VOGEL, K. *The Application of the Murphy Button to the Large Intestine.*
7. SELLHEIM, H. *How to Learn the Technic of Symphysiotomy.*
8. FEILCHENFELD, H. *Cure of a Chronic Inflammation of the Tear Sac by an Intercurrent Erysipelas.*
9. GUTMANN, A. *External Eye Diseases and Their Relation to Disorders in the Nose.* (Concluded.)

1. These authors report a series of 11 cases of syphilis treated by atoxyl and conclude that it has an unmistakable good effect when used in sufficiently large doses; it is especially beneficial in the malignant forms. They injected intramuscularly 10 cases with a 10% solution and one with a 15% solution. The injections were of 0.2 to 0.6 gm. every two days at first, later every three days. It caused no local disturbances. It makes a very important addition to our means of combating syphilis in those cases which have an idiosyncrasy against the mercury and iodide treatment.

2. Schmorl has obtained good results in staining sections by the Giemsa method by selecting thin frozen sections previously fixed in 4% formalin, and staining after the Giemsa method, allowing the stain to be in contact with the section for one hour, then using a fresh solution of the stain and allowing it to stand for 12 or, better, 24 hours.

[L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT, No. 21. MAY 21, 1907.

1. *V. HERFF, O. *The Prophylaxis of Puerperal Fever.*
2. *ZANGEMEISTER, W. *The Present Status of the Streptococcus, Especially in Relation to Obstetrics.*
3. TOMASCZEWSKI, E. *The Transmission of Experimental Syphilis of the Eye of the Rabbit from one Animal to Another.*
4. *MORO, E. *A Clinical Test for Alexin.*
5. WEISSWANGE. *When to Operate on Myoma.*
6. *LISSMANN, P. *New Investigations on the Dorsal Foot Reflex.*
7. *LITTAUER, A. *Doderlein's Gaudinin Method for Protecting the Skin during Operations.*
8. WIMMER, H. *A Case of Intestinal Calculus.*
9. *SZÖLLÖSY, L. *A Case of Neurotic Gangrene of the Skin and its Relation to Hypnosis.*
10. KRUMMACHER. *Rare Complications of Pregnancy.*
11. KAUPE. *The Etiology of Pemphigus Neonatorum.*
12. LENGFELLNER, K. *A Steel Spring for Flat Foot Pads.*
13. *TREUPEL, G. *The Present Status of Percussion of the Heart.* (Concluded.)

1. During the last few years there has been a slight but distinct rise in Prussia in the mortality from puerperal fever. This, according to Herff, is to be laid at the door of the physician and not of the midwives. The causes are twofold, viz.: insufficient disinfection of the hands and too much operating. One of the chief reasons for carelessness in disinfecting the hands is the complexity of modern methods. This difficulty has been obviated in his clinic by the use of Ahlfeld's hot-water alcohol method. Out of 6,000 deliveries in his clinic the mortality from puerperal fever was only .08% and no cases were infected in the hospital. It is important to operate only on strict indications and to make as few pelvic examinations as possible.

2. Recent work on the streptococcus, and especially in its relation to immunity, make it probable that there is only one form of streptococcus and that the variations shown are merely the effects of environment. Zangemeister shows that the streptococci often found in the vaginal secretion of healthy women can be made pathogenic for animals, and that immune sera acquired in this way will protect against infection with other varieties of streptococci. There is, therefore, the possibility that puerperal fever may arise from infection with such organisms, but it has been clearly shown that the vast majority of infections are due to germs introduced from without.

4. Moro describes a method devised by him for the demonstration of alexin, requiring only a few drops of blood. For the details the reader is referred to the original article.

6. The dorsal foot reflex consists in the movement of the toes on tapping the outer part of the dorsum of the foot with a percussion hammer. Normally the toes (excepting the great toe) are extended, but in disease a plantar flexion may occur. Lissmann confirms the observations of the two describers of the reflex, Bechterew and Mendel, finding it positive (*i. e.*, plantar flexion) only in cases with positive Babinski's sign, and absent altogether in anterior poliomyelitis. He also found in infancy the reflex positive in all cases with positive Babinski. The significance of this sign is therefore identical with that of Babinski's, indicating (except in infants) disturbance of conduction in the pyramidal tract.

7. Döderlein has shown that the contamination of the operative field from the invasion of bacteria from the neighboring skin may be prevented in the following way: the skin is cleaned before operation with a formalin-benzin mixture, painted with iodine and then covered with a sterile solution of rubber in forman-benzin, which sticks to the skin and forms an impervious layer over it. Littauer reports excellent results from the use of this "gaudinin" in abdominal operations.

9. In a typical case of multiple neurotic gangrene of the skin Szöllösy produced a similar lesion on the back of the hand by suggestion, telling the patient, while she was under hypnosis, that it would appear the next day. The patient had no memory of what had occurred, but the sore appeared as predicted.

13. Treupel finds that three precussion methods give the most accurate projection of the heart's outline, viz.: (1) the Goldscheider very light percussion (Schwellenswert percussion); (2) the medium heavy percussion according to Moritz; (3) the Ebstein resistance percussion (Tast percussion). All of these gave results agreeing closely with those obtained with the orthodiagraph; the Goldscheider method was, however, the most accurate. He considers that all three have their places and are useful as checks on one another.

[W. T.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 18. MAY 6, 1907.

1. *HILDEBRAND, O. *Spasm of the Abdominal Muscles in Gun-shot Wounds of the Thorax.*
2. GABRITSCHEWSKY, G. *The Relation of Streptococcus Erythemas to Scarlatina.*
3. KOCH, W. *On Osteoma.*
4. MINOR, L. *The Frequency of Quinquaud's Sign in Alcoholism, Various Nervous Disorders and in Non-drinkers.* (Continued article.)
5. *MEYER, F., and BERGELL, P. *Immunization against Typhoid Fever.*
6. ARONSON, H. *Investigations on Typhoid Fever and Typhoid Serum.*
7. KAUSCH, W. *The Surgery of Cancer of the Stomach.* (Concluded.)
8. MAGNUS, LEVY A. *Account of a Trip to Russia.*

1. In two cases of gun-shot wound of the thorax, the existence of tenderness and abdominal spasm led Hildebrand to open the abdomen, but he found no lesions there. A third case presented the same signs and the autopsy showed that the abdominal organs were intact. The cause of the pain and spasm proved to be irritation of the lower intercostal nerves by the bullet, the skin and muscles of the abdomen being supplied by the six lower intercostal nerves. The cases were all penetrating wounds in which the bullet entered near the heart and became lodged in the lower intercostal spaces behind. The practical lesson from these observations is that in the case of gun-shot wounds of the thorax abdominal pain and spasm do not necessarily mean injury to the abdominal viscera.

5. The chief defect of the various sera used against typhoid fever has been that the principal action has been bacteriolytic and not antitoxic, and the destruction of the bacilli has overwhelmed the organisms with the endotoxins which were set free. Meyer and Bergell have succeeded in obtaining an endotoxin from typhoid cultures, which kills laboratory animals in a short time. If smaller doses

are employed, the animals die after a few days, with diarrhea, prostration and finally convulsions; the post-mortem examination shows intestinal lesions like those of man, but no enlargement of the spleen. It is, therefore, probable that many of the symptoms of typhoid fever are purely toxic, while others are due to the bacteriemia. By inoculating horses the authors have obtained a serum which is distinctly antitoxic as well as bacteriolytic and exerting marked curative and prophylactic properties in animals. The serum is somewhat weak for use in man, but will probably be susceptible of improvement.

Correspondence.

LETTER FROM CHINA.

Climate and Diseases in Shanghai and Canton. Medical Practice.

Manila, May, 1907.

Mr. Editor: Since my letter to you from Japan, I have spent more than two months in China, having landed in Shanghai just before Christmas and sailed from Hongkong in March. Excepting a few mild, sunny days, the winter climate of Shanghai is not a pleasant one. It thaws nearly every day, but the sun may not shine for weeks and a raw wind sweeps up the Yangtse from the sea, searches every corner of the city and penetrates to one's vital organs. Owing to the slight degree of elevation and the remarkable flatness of that part of China, the frequent February rains and the scant sunshine, there is mud and water everywhere. The houses, warmed only by open fires, are often cold. These conditions would seem at first sight to favor colds, bronchitis and pneumonia, but among the English residents who constitute the majority of foreigners in Shanghai colds and bronchitis are infrequent. This may be because the temperature changes in Shanghai are not very frequent or extreme; or it may be due in part to two other facts, namely: that owing to the coolness within and the moderate cold without, the interchange of air through window cracks is less rapid, and because the skin is never damp with perspiration, one is less sensitive to draughts. I was reminded of the remark of an experienced physician: "People do not take cold, they take hot."

The winter climate of Hongkong is somewhat like that of Shanghai but much milder. That of Peking is entirely different, as might be expected from its inland situation.

The sun shines there day after day, from a cloudless sky. The air is brisk, thaws are unusual and it rarely snows. The thirsty wind from the Mongolian desert absorbs every atom of moisture, leaving the surface soil too dry to freeze; hence the dust-storms which occasionally occur at this season. The dryness of the air affects the skin of the body and limbs making it harsh and causing pruritus. Just as in a New England winter when the northwest wind clears the sky, the dry air sparkles and the temperature is low, one feels that he must rush into the open and take violent exercise, so in Peking such weather is tremendously stimulating. But in Peking it lasts almost without intermission for months and the opportunities there for out-door sports are limited. Consequently, nervous tension is great. Insomnia is spoken of by the residents and is a common complaint of visitors. Nevertheless, and in spite of the unusual quantities of street dust, which get into the air passages, there is little infectious disease in Peking in the winter. Perhaps the bacteria of the street wither away and die, as did the seed which fell upon the rock. Last January, however, there was a widespread epidemic of whooping-cough among children and some cases were fatal.

The winter, until the middle of January, having been even drier than usual, and fearing that by frost getting deep into the ground crops would be delayed, the Emperor, not daunted by a cloudless sky, prayed for snow. When I arrived in Peking the sun was obscured, the clouds broke on the second day, and on the third came rain and sleet. Men said it was a bad omen, that "the earth had taken on a coat of mail." The Emperor prayed again; threatening clouds hung low for a week, then a little snow fell. But the high priests were not satisfied, and when I left Peking his Celestial Holiness was about to pray once more. Bad weather followed me to Hankow and it snowed on the Yangtse.

The ordinary run of hospital cases in Shanghai in the winter is of no special interest, but there are a few cases of Malta fever or liver abscess. Beri-beri is common there in summer among the Chinese, but is not seen at all in winter. In Hongkong it is found the year round and in summer hundreds of cases are treated in the hospitals. The Tung-wa Hospital in Hongkong is run and maintained by Chinese for their own people. There were thirty odd cases of beri-beri there in March. The resident, Dr. Jew Hawk, is a Chinese trained in the United States. He said that 40% of the beri-beri cases admitted to the hospital died (mild cases do not come in), and that of those who recover some have recurrences in a short time. He had not observed recurrence yearly at the same period. He considers the extreme dampness in the summer in Hongkong to be an important etiological factor. The winter climate there is by no means a dry one, but the cold weather seems to check the disease. The patients in the Yung-wa may be treated as they prefer, by Dr. Jew Hawk on modern lines, or by others who prescribe the time-honored remedies of China. If the neuritic pain of beri-beri is severe they always get transferred where they will receive morphine. The beds which the Chinese prefer are low wooden tables covered with a thin mat of straw. A Chinese woman on entrance to a European hospital was laid upon a spring bed. When she turned over and felt the mattress give she clutched the sides of the bed in terror, fearing that she would fall, and thereafter slept upon the floor.

At the Government Civil Hospital, also in Hongkong, I saw several obscure cases of fever. One of them of short duration had an urticarial eruption on the skin and distoma eggs in the stools. A second patient, who had had slight fever and paresis of one arm for weeks, had taken iodide all the time with little improvement, and a third, a native of India, had a chronic wasting disease, with recurrent fever, jaundice and enlarged liver and spleen. The spleen was not nearly as large as is usual in kola-azar. Malignant disease seemed the most probable diagnosis. It was most interesting to see and discuss these cases with the resident, Dr. Koch.

Shortly before I left Boston, a friend said to me: "Why don't you start a firm of doctors, including physician, surgeon and specialists? I will pay you so much a year to keep me in good health, as they do in China." In Honolulu there is at least one firm of doctors, and in Shanghai and Hongkong all the English physicians belong to firms. There are usually four partners. Every man in turn goes home for one year in every four and has the opportunity to see what is being done there. His practice is taken up by the other members and the absentee receives his percentage of the profits at regular intervals. The fees in Shanghai are so much a year for each member of the family. The patient may choose any doctor in the firm as his physician and call in any of them for consultation, or when his physician is away. From the patient's point of view the system saves trouble, a doctor can be found at any time and, most important of all, it is a sort of insurance policy, because when there is much sickness in the family the doctor's bills do not increase. From the physician's standpoint it is a success because he gets an assured income, which he can estimate and it enables him to return home every few years without losing his patients. In Shanghai it is agreed that every man shall take complete charge of his patients. If an operation is required he shall do it and if special treatment is necessary he must give it. He may, of course, consult his colleagues. The system in Hongkong is different. The partners divide the classes of work as far as possible among each other and they charge fees for every visit, but profits are divided as at Shanghai. If a man wishes to join the firm he must first serve satisfactorily for two years gratis. Pure specialists are unknown in these cities and probably they will not appear there until the communities are larger than now. When they do come the firms in Shanghai will have to make some concessions. It is an interesting question whether or not such firms could be run smoothly in a city where there are nine or ten well-established specialties.

Very truly yours,

George C. Shattuck, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 6, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,325	485	Quincy	11	1
Chicago	—	—	Waltham	7	1
Philadelphia	—	—	Pittsfield	6	—
St. Louis	—	—	Gloucester	5	1
Baltimore	173	49	Brookline	6	—
Cleveland	—	—	North Adams	7	1
Buffalo	—	—	Chicopee	10	6
Pittsburg	—	—	Northampton	6	0
Cincinnati	—	—	Medford	4	—
Milwaukee	—	—	Beverly	3	2
Washington	—	—	Leominster	—	—
Providence	68	18	Hyde Park	3	1
Boston	160	43	Melrose	3	0
Worcester	36	4	Newburyport	—	—
Fall River	28	16	Woburn	3	—
Cambridge	19	5	Marlboro	—	—
Lowell	25	8	Westfield	3	2
Lynn	21	6	Peabody	—	—
New Bedford	20	12	Revere	2	—
Springfield	19	4	Attleboro	3	0
Lawrence	16	9	Clinton	8	3
Somerville	13	7	Adams	2	1
Holyoke	14	5	Gardner	—	—
Brockton	15	3	Milford	—	—
Malden	4	1	Watertown	2	1
Chelsea	11	2	Plymouth	—	—
Salem	11	1	Weymouth	3	0
Newton	6	3	Framingham	2	—
Haverhill	10	1	Southbridge	3	1
Fitchburg	7	—	Wakefield	—	—
Everett	6	1	Webster	—	—
Taunton	11	3			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 13, 1907.

J. T. MILLER, assistant surgeon. To the "Rhode Island."

C. T. GRAYSON, assistant surgeon. Ordered to the Bureau of Medicine and Surgery, Navy Department.

P. M. RIXEY, medical director. Commissioned medical director from May 7, 1907.

R. C. HOLCOMB, surgeon. Commissioned surgeon from Dec. 17, 1905.

J. T. KENNEDY, surgeon. Commissioned surgeon from May 7, 1907.

F. M. MUNSON, passed assistant surgeon. Commissioned passed assistant surgeon from April 5, 1906.

R. G. HEINER, passed assistant surgeon. Commissioned passed assistant surgeon from Dec. 26, 1906.

H. L. BROWN, passed assistant surgeon. Commissioned passed assistant surgeon from April 12, 1907.

O. J. MINK, passed assistant surgeon. Commissioned passed assistant surgeon from June 7, 1907.

O. V. HUFFMAN, assistant surgeon. Ordered to the Naval Hospital, Boston, Mass.

G. B. TRIBLE, assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va., July 30.

H. A. GARRISON, assistant surgeon. Ordered to the Naval Hospital, Newport, R. I.

M. E. ROSE, assistant surgeon. Ordered to the Naval Hospital, New York, N. Y.

G. P. LUMSDEN, medical inspector. Detached from the Naval Recruiting Station, Indianapolis, and ordered to command the Naval Hospital, Pensacola, Fla.

F. S. NASH, surgeon. Detached from command of the Naval Hospital, Canacao, P. I. Home and wait orders.

L. W. BISHOP, passed assistant surgeon. Detached from the "Iowa" and granted leave for one month.

W. J. ZELESKY, passed assistant surgeon. Detached from duty with the third torpedo flotilla, on board the "Stringham," and ordered home to wait orders.

J. D. MANCHESTER, passed assistant surgeon. Detached from the Naval Hospital, Philadelphia; to the Naval Hospital, Pensacola.

M. C. BAKER, acting assistant surgeon. Detached from the "Franklin" and ordered to Midway Islands, sailing from San Francisco, Cal., about July 25.

D. H. CASTO, acting assistant surgeon. Ordered to the Naval Recruiting Station, Indianapolis, Ind.

M. DONELSON, acting assistant surgeon. Ordered to duty with the third torpedo flotilla, on board the "Stringham."

F. D. CHAPPELEAR, acting assistant surgeon. Detached from the Naval Hospital, Pensacola, and ordered home to wait orders.

G. L. WICKES, assistant surgeon. Detached from the "Wilmington" and ordered to the "Cincinnati."

F. E. SELLERS, assistant surgeon. Detached from the "Cincinnati" and ordered to the "Wilmington."

P. J. WALDNER, pharmacist. Appointed pharmacist from July 3, 1907.

APPOINTMENTS.

THE following physicians have been appointed state health inspectors: District 1, Charles G. Morse, Wareham. District 2, Adam G. MacKnight, Fall River. District 3, Wallace C. Keith, Brockton. District 4, Elliott Washburn, Taunton. District 5, Harry Linenthal, Boston. District 6, Albert P. Norris, Cambridge. District 7, William Voss, Beverly. District 8, William Hall Coon, Lawrence. District 9, Charles E. Simpson, Lowell. District 10, William W. Walcott, Natick. District 11, Melvin G. Overlock, Worcester. District 12, Lewis Fish, Fitchburg. District 13, Harvey T. Shores, Northampton. District 14, Richard S. Benner, Springfield. District 15, Lyman A. Jones, North Adams.

RECENT DEATH.

HAMILTON OSGOOD, M.D., M.M.S.S., of Boston, died in Oxford, England, July 10, 1907, aged sixty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

The Technic of Operations upon the Intestines and Stomach. By Alfred H. Gould, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

A Text-Book of Obstetrics. By Barton Cooke Hirst, M.D. Fifth edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

Diet in Health and Disease. By Julius Friedenwald, M.D., and John Ruhräh, M.D. Second edition, thoroughly revised and enlarged. Philadelphia and London. W. B. Saunders Co. 1906.

Photoscopy (Skiascopy or Retinoscopy). By Mark D. Stevenson, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M.D., LL.D. Illustrated. Philadelphia and London. W. B. Saunders Co. 1907.

A Laboratory Manual of Invertebrate Zoölogy. By Gilman A. Drew, Ph.D. Philadelphia and London: W. B. Saunders Co. 1907.

Publications of the Massachusetts General Hospital, Boston. Selected Papers by the Staff. Vol. I, No. 3. June, 1907.

Thirtieth Annual Report of the Managers of the Adams Nervine Asylum. Boston. 1907.

Thirty-sixth Annual Report of the Trustees of the City Hospital of the City of Worcester for the Year Ending November 30, 1906.

Lea's Series of Pocket Text-Books. Materia Medica, Therapeutics, Pharmacology and Pharmacognosy, including Medical Pharmacy, Prescription Writing and Medical Latin. By William Schleif, Ph.G., M.D. Series edited by Bern B. Gallaudet, M.D. Third edition, revised and enlarged. Philadelphia and New York: Lea Brothers & Co. 1907.

A Text-Book on the Practice of Gynecology. For Practitioners and Students. By William Easterly Ashton, M.D., LL.D. Third edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Gynecology and Abdominal Surgery. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon. Edin.), and Charles P. Noble, M.D., Vol. I. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Abdominal Operations. By B. G. A. Moynihan, M.S. (London), F.R.C.S. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Co. 1906.

Atlas and Text-Book of Human Anatomy. By Dr. Johannes Sobotta. Edited, with additions, by J. Playfair McMurrich, A.M., Ph.D. Illustrated. Vols. I and II. Philadelphia and London: W. B. Saunders Co. 1906.

A Treatise on Surgery. By George Ryerson Fowler, M.D. Illustrated. Vol. II. Philadelphia and London: W. B. Saunders Co. 1907.

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Original Articles.

HYDROPHOBIA AND ITS PREVENTION.*

BY C. P. SYLVESTER, M.D., BOSTON.

IN 1856 a committee appointed by the American Medical Association to investigate the subject of rabies presented a paper on "Hydrophobia, Its Origin and Development," which was read at the meeting in Detroit in May of that year, by Dr. Thomas Blatchford.[1] In it he reported 106 human deaths, the first seven cases having been furnished him through the kindness of Drs. J. B. S. Jackson and C. B. Homans, of Boston. The cases were not all the committee could find in this country, but were deemed enough to make out justification for legislation, and a copy of that report was sent to the governor of each state.

In the preface was this question: "Shall human *or* canine life be protected by the ægis of the law?" The silent evasion of this question since 1856, when Germany had already answered it and acted, although intended to protect the dog, has protected neither dog nor man. It has caused the death of at least several thousand persons in the United States, and naturally a great many more dogs.

We are believed by pet animal owners and others to be cold-hearted and brutal when we attempt to correct legislative deficiencies which allow the lives of scores of children to be sacrificed annually by the most horrible death known. The opponents of such legislation have been able to prevent the scientific enactment of laws principally through general ignorance as to the existence, origin, contagiousness and frequency of the disease.

That some members of the medical profession are loath to give up the traditions of our ancestors regarding the disease has been demonstrated to me by the comparison of their ideas now with those expressed seven years ago, when I first wrote on the subject of rabies. The layman must get his knowledge of sanitary science through the physician.

Rabies is an acute disease of all warm-blooded animals, caused by a specific germ and communicated by inoculation to man. The disease is prevalent everywhere, with the exception of a few places where it has never been imported. There are many references to it in early literature, its mysterious appearance and awful character inspiring the superstitious writers of that time.

It was accurately described in an ancient Hindu work, written by a physician named Susruta one thousand years B.C. Homer, in the ninth book of the Iliad, compares the fury of Hector to the rage of a mad dog, and Aristotle in 322 B.C. described it. To him is due the existing fallacy that it is fatal to every creature bitten but man.

Lucanus in his poem "Pharsalia," in about 60 A.D., wrote: "The poison kills, the bite conveys it, death lurks in the teeth."

*Read before the Boston Society for Medical Improvement, March 19, 1907, and before the clinical section of the Suffolk District Medical Society held in conjunction with the Boston Medical Library Meeting, May 1, 1907.

The origin of the disease in man is practically always associated with dogs, yet it may be caused by bite of any animal. The bite of a cow has caused it. The Duke of Richmond, former Governor of Canada, contracted the disease from the bite of a captive fox. Very rarely does one person contract it from another, the germ being attenuated by its passage through man. Human saliva inoculated into a dog has developed the disease. The dog and also all carnivera are potent attenuators of the germ with lengthening of the period of incubation. All herbivera intensify the germ. The rabbit, being a marked intensifier, shortens, by the successive passage of the virus through several of them, the period of incubation from three weeks to six or seven days, which gives us the "fixed virus" of Pasteur used for the preparatson for his vaccine. With the intensification or attenuation of the virus goes respectively a greater or lesser distribution of the cause of the disease in the nervous system and a more marked or slighter rabies of the convulsive form, as will be explained later.

Rabies occurs during all the months of the year, but is perhaps a little more prevalent during April, May, June and July.

There is no doubt but that the apparent period of incubation can vary exceedingly. The period may be as short as one week or longer than one year. Most cases develop in from three to seven weeks. In 144 cases carefully observed by Renault, LeBlanc, Saint-Cyr and Peuch[2] the incubation period was 100 to 120 days in four cases; 80 to 90 days in seven cases; 70 to 75 days in five cases; 365 days in one case.

Fifty-seven per cent did not develop the disease until after thirty days. This apparent variable period of incubation, however, consists probably of an incubation period as constant as that of small-pox, but with a most variable pre-incubation period on account of the irregularity with which the germs are conveyed to their seat of development. The so-called incubation period in man may likewise vary as widely. The infectiveness of the disease in man depends even more upon the stage of the disease in which the rabic animal is than the situation of the wounds. The virus is quantitative rather than qualitative, and lacerated uncovered parts would naturally receive more saliva than where the clothes could absorb it, and the head and neck lacerations not only being unprotected by clothing, but being so much nearer the seat of development of the disease, give a higher mortality, with shorter period of incubation, than covered wounded parts more distant. The mortality, however, may vary from *nil* to 100% without regard to the situation of the wounds. I have seen the records of two rabic dogs where five persons in each case were bitten. All ten persons died of hydrophobia. What was the reason for this very exceptional mortality? Let us trace the mode and route of development of the rabies germ and see.

That the germ develops in nerve tissue there is no doubt, for there is no part of the nerve tissue that has not been found infective. But the nerve

tissues are never found virulent until the end of the incubation period, and then the infectiveness increases markedly as the cerebrospinal axis is approached. In other words, the nidus of infection is not at the periphery as in tetanus, but in the cerebrospinal substance, and, therefore, it is probably not, as is tetanus, an ascending neuritis.

That it is a descending neuritis, after developing in the central nervous system, there is sufficient proof. How is the nidus of infection transferred to the brain?

Pasteur has shown that intravenous injection is more effectual than intracranial, which proves that the blood stream can convey it, and Nocard has shown that it is the solid rather than the liquid elements of dialyzed saliva which are infective. Whether it is the blood serum or the red corpuscles or the nerve fibers or all three which furnish the route from the periphery, I am unable to answer. No doubt in large quantities the blood serum conveys it. In the ordinary rabies of street infection experiments are at present, I think, tending toward investigations of the corpuscular route. That the organisms may escape after development in small numbers into blood and lymph channels to all parts of the body has been demonstrated by inoculation, although very rarely.

The clinical symptoms give us the key to the seat of development and later distribution, although the "Negri bodies," believed to be the cause of the disease, are not usually found most numerous at this seat. The chief symptom of extreme general hyperesthesia points to the sensory rather than to the motor roots, and the most intense hyperesthesia followed by paresis of the glosso-pharyngeal region would indicate greatest involvement of the nerve roots supplying that tract, namely, the glosso-pharyngeal, filaments of spinal accessory, pneumogastric, hypoglossal and gustatory branch of the fifth, all of which arise in the nuclei of the medulla and floor of the fourth ventricle.

Now comes the explanation of why the stage of the disease has even more to do with the infectiveness than position of the bites. The saliva only becomes infective after the micro-organisms have developed in the larger sensory and smaller motor roots and descended the nerve tracts to their terminations in mouth, pharynx and larynx.[3] The virus is, as before stated, quantitative rather than qualitative. As you know, the sympathetic nerves by their ganglia and fibers are most closely connected with the sensory; and in no part of the body are the sensory and ganglionic systems so intimately associated with each other as in the glosso-pharyngeal tract. Therefore, irritation of one irritates the other, and consequently in the earlier convulsive stage of the disease the salivary glands secrete a lesser amount of a thicker, not easily absorbed, saliva with no or very few germs. Later, when cerebrospinal centers are deluged and the germs are descending all three nerve tracts, paralysis comes on, the saliva becomes thin, copious and concentrated with virus, and never fails to infect. Fortunately for us the dog is then more apathetic than furious.

Hydrophobia is caused by inoculation with a specific microbe. To Negri[4] of the University of Pavia has been given, by many observers, the credit of discovering the probable cause of the disease. In 1903 he discovered bodies, present in the nervous system of animals, dead from rabies, which he believed to be protozoa. He described them as being rounded or oval in form, varying in size from 1 to 25 μ in diameter, staining distinctly with eosin and containing a central body surrounded by granules, these inner bodies being principally basophilic. They are more abundant and larger in the cells of Ammon's horn than elsewhere, but are often found in the Purkinje cells of the cerebellum, in the pyramidal cells of the cortex and in the cells of the pons, Gasserian ganglion, spinal ganglia and spinal cord.

Although there are many points in favor of the "Negri" bodies containing the cause of rabies, there are yet a few points to be cleared up; but if, as is quite generally conceded, their presence exists in no other disease, they are then a positive evidence of rabies and make it possible to diagnose the disease by the section method in a few hours and by the smear method in from one half to one hour from the time the animal arrives in the laboratory.

Frothingham's[5] method of rapid diagnosis by making impressions of the Ammon's horn upon a slide or cover glass gives excellent and rapid results. The method is as follows:

(1) "Dissect out the Ammon's horn and cutting with scissors at right angles to its length divide it into small disks as desired; (2) press a thoroughly cleaned slide upon a disk and remove it suddenly, or lifting the disk with forceps, press upon the slide. Four or more impressions may thus be made from one disk, depending upon its thickness. Four to eight impressions had better be made upon one slide, as some will naturally be better than others. Before the impressions have thoroughly dried, (3) place impression in methyl alcohol one-half minute or longer; (4) stain with Van Gieson's stain (heating gently) one-half a minute or longer; (5) wash in water, dry and examine."

Van Gieson's stain is made up as follows: Saturated alcoholic solution of fuchsin, three drops; aqueous solution of methylene blue, one drop; water 20 cc.

This saving of from two to four weeks over the biologic method is of vital importance in the treatment by the Pasteur vaccine.

ANATOMICAL CHANGES.

The anatomical changes of the disease are confined principally to the nervous system. The meninges are injected and edematous, and punctiform hemorrhages of brain and cord are found on section, due to degenerative changes of the walls of the veins and capillaries. The lower part of medulla oblongata shows these changes the most. The chromatin of the ganglion cells breaks up,

and processes disappear somewhat similar to appearance met with in tetanus, and there is a proliferation of the endothelium of the capsule of the ganglion cells. Salivary glands, mucous membrane of larynx and trachea are hyperemic and seat of petechial hemorrhages, as is also the stomach, which may be covered with yellow viscid mucus and contain coffee-ground débris but no food. Dogs' stomachs may contain all sorts of foreign substances if the convulsive stage of the disease was present.

SYMPTOMS IN CANINES.

The disease in dogs manifests itself somewhat as follows: In usually from three to seven weeks after infection the animal becomes restless and irritable, rarely fawning and affectionate, with marked hyperesthesia, starting and crouching in fear at the least noise. He shows a tendency at this stage to tear and swallow foreign bodies and a disposition for darkness and seclusion. The increasing brain infection now begins to cause marked signs of aberration of senses with hallucinations. He imagines he is being annoyed and injured and snaps viciously at phantoms or real objects. The furious stage, in which the animal runs wild and mad, now develops, and depending on the amount of infection and attenuation of the germ, gives way after a certain time to the paralytic stage, and ending in death in from four to seven days from beginning of disease.

On the amount of infective material and its attenuation, rather than on the dog, depends the relative prevalence of the convulsive or paralytic symptoms. In about one-third of the cases in dogs the disease is all convulsive. In the other two-thirds the paralytic element steadily increases, and in about 5% it is all paralytic in form, or what is known as "dumb rabies" or "drop jaw." These drop-jaw cases usually begin the epidemic. The animal wouldn't and couldn't bite in this form, but his saliva coming in contact with an abrasion might lead to the most horrible death known to man.

It is excellent judgment to beware of any dog that is sick until he is well or until a veterinary surgeon knows he has not rabies; especially, if he is gloomy, irritable and restless, if he snaps and barks at nothing, if he returns home from a disappearance looking dirty, exhausted and sick, if he seems more fond of you than usual and insists on licking your hands and face. Last, but not least, if he seems to have a foreign body in his throat, don't unguardedly look for it any more than you would look down gun-barrels for recreation. The body may prove to be the beginning paralysis of rabies. In rabific dogs their thirst is greater than their fear and they drink water early in the disease.

SYMPTOMS IN MAN.

The disease in man is more horrible to witness than it is possible to relate. There are usually three stages more or less well defined,—those of irritation, spasm and paralysis.

In the first, or melancholic, the scar of the original infection may become painful, itching and congested. There is depression, irritability, hyperesthesia, mental anxiety and insomnia or frightful dreams. There is thirst and yet such intensely painful spasms of throat and chest on attempting to drink as to threaten suffocation and cause indescribable fear at the sight or sound of water.

In twelve to twenty-four hours the spasmodic stage is well developed, and the laryngeal symptoms are frightfully increased, with intense dyspnea and pitiable struggling and gasping. The patient froths at the mouth and expels unswallowed saliva in all directions, while his congested eyes and face and agonized expression show plainly the anguish of his sufferings. With the increasing hyperesthesia, the slightest impression on the senses, such as light, currents of air from moving bed covers or brushing away flies, or the odors of chloroform or ether used to control the symptoms, cause the paroxysms to return when the patient, in a fit of mania, may viciously attack anybody near.

The intervals between the paroxysms gradually shorten until exhaustion seems to modulate the stage into paralysis, unless death supervenes from apoplexy or asphyxia. During this apparent stage of exhaustion, which is due to the ever-increasing brain infection, the patient seems to be much easier, mind is clear and deglutition may be possible, but beginning analgesia, dropping of the jaw, salivation and rattling in the larynx steadily increase, and coma and death enp all in from one to three days from beginning of symptoms. As with canine madness, the paroxysmal stage may be short or absent, as may also the paralytic stage, when it has been mistaken for tetanus, just as the so-called "spontaneous hydrophobia" was no doubt sometimes tetanus, as was suggested by Dr. James Mease[6] of Philadelphia in a prize essay on "Rabies" in 1793.

Not so long ago a coroner in Philadelphia refused to receive certificates signed hydrophobia and returned them "for correction." A diagnostician with such views should be excluded before hydrophobia is excluded in differentiating between the few functional and organic nervous diseases, such as hysteria, epilepsy, strychnine poisoning, tetanus, and acute ascending spinal paralysis for which it has been mistaken. The diagnosis will then be easy, except perhaps in early deaths, when autopsy might be the only positive proof.

Time and care will point out hysteria or what is known as lyssophobia.

PROGNOSIS.

There have been recoveries reported by good authorities in both dog and man without treatment, but recoveries in man are if authentic exceedingly rare. Those cases probably received the minimum amount of virus with the minimum attenuation possible to produce the disease, and possessed at the time not only a high opsonic index, but also a strong and willful nervous system. It has been variously estimated that hydrophobia develops in from 5% to 50% of all persons bitten by rabid animals and untreated by vaccine. Sta-

tistics would indicate 10% to 15% to be a fair estimate.

Unfortunately there is about as much ignorance and prejudice regarding the Pasteur vaccine treatment as there is regarding the disease itself, both within and without our profession. I heard recently one of our most eminent surgeons of this state in an address before a body of laymen give his personal opinion as against the use of it. The Pasteur preventive treatment is based on the theory of the production of an active immunity depending either on an antitoxin or on a germicidal state of the tissues, probably the latter. It has no effect, beneficial at least, if the symptoms of the disease have appeared.

The vaccine is prepared from the spinal cord of a rabbit killed by inoculation with "fixed virus." Parts of this cord are dried anywhere from three to fourteen days. That part dried three days contains practically all of the toxic potency. That part dried fourteen days loses all its toxic potency. One centimeter in length of cord dried fourteen days is rubbed into an emulsion with 5 cc. of sterile broth or salt solution, and 3 cc. of this fluid are used for first injection. Twenty of these injections now follow each other within a period of fifteen days, in which the spinal cord for each successive injection is usually subjected to a shorter drying period, so that on the fourteenth and fifteenth days a cord is used which has been dried only three days.

What is known as the "intensive treatment," in which twenty-four injections in fifteen days, with six more on the six next days, is used for those cases bitten about the head and neck, and for the cases not seen for several days after inoculation. Our intensive treatment is used in Berlin as their ordinary treatment, and in other cities there are minor differences. We get our vaccine for use in Massachusetts from the New York Board of Health, bottles of proper amount and strength coming each morning by mail at a cost of $25 for each course of treatment. The Boston City Hospital has procured it in this way for nine cases treated by them since last June.

What are the results of this treatment, which, since its origin by Pasteur, has been so actively opposed, some even claiming that the percentage of cases which developed rabies had been increased since its beginning? At least 10% of all persons bitten by rabid animals, before or without the use of Pasteur vaccine, developed the disease and died. Of all persons bitten by rabid animals, with subsequent Pasteur treatment, less than 1% have died. The mortality has never reached 1% in Paris since the institute was opened, while in the New York institute it has only twice exceeded 1%. Dr. Keirle,[7] Director of Pasteur Institute in Baltimore, writes me that he has treated 998 cases with one death.*

These statistics answer all questions as to its efficiency, and justify the honor paid recently to Pasteur when he was elected by the citizens as the most popular man in France.

* Dr. Keirle has since reported 1,000 cases treated, with two deaths, one of which may have been due to chronic Bright's disease, which was present before and during treatment.

"Typical serum," which will protect animals in doses equivalent to 1-25,000 of body weight is now prepared by inoculation of sheep with rabic material attenuated by digestion according to the Italian method. It may be dried and kept indefinitely, and should be used in hydrophobia instead of the Pasteur vaccine, if the symptoms of the disease have already appeared. Although harmless, its curative efficiency has not yet been satisfactorily tested on the disease in man. It has been used with favorable results on animals. Cauterization, after the inoculation by the rabid animal of much of the thin saliva, of the beginning paralytic stage would probably no more control the action of the germ than cauterizing a hypodermic of nitroglycerin would control the action of that drug. It is one of the things to be tried, however, and if used early might prevent the absorption of sufficient quantity of the thick viscid saliva of the convulsive stage necessary to cause the disease. Pure nitric acid has experimentally given the best results and should be used freely.

But that there are any cases of hydrophobia in this country is a reflection upon our ability in the department of sanitary science. It is within our power to absolutely exterminate rabies, and we can do it, or we can allow rabific dogs to viciously lacerate and kill by the most horrible death known, hundreds of children annually, for whom we are responsible, as well as thousands of dogs for whom we are also responsible. Ten thousand dogs alone died of this disease in France between 1900 and 1904; and I wish now to close this paper by calling your attention to the rational prophylactic treatment, by enactment and enforcement of laws, such as exist in Great Britain, Germany, Sweden, Norway, Switzerland and other places.

Australia shows perfect results of a law requiring all dogs imported to be quarantined for six months. No case of rabies has ever appeared on this island. Great Britain at home has achieved brilliant results after hundreds of subjects have died from the disease. From 1887 to 1898, inclusive, there were 147 deaths from hydrophobia in man, and 2,554 in dogs. During this period dog laws were sometimes in force and other times rescinded. Strict laws regarding muzzling and quarantine have since then been continually in force, and in 1900 no deaths from hydrophobia occurred, the first time in more than fifty years, while during 1900, 1901 and 1902 only twenty cases of rabies in dogs developed. Since the end of 1902 there have been no cases, and the disease, which between 1848 and 1898 caused the deaths of more than 1,000 persons, has been by the application of a few simple laws exterminated in Great Britain.

Germany saw the necessity and justice of dog regulation many years earlier, and wisely and promptly acted, thus ending the ruthless sacrifice of human life through misdirected sympathy. Between 1848 and 1853 Berlin averaged 35 cases of rabies annually. During the spring of 1853 a marked increase in the number of cases resulted, on July 20, in an order to muzzle all dogs. Four cases developed the next year, one in 1855, and none for the next seven years. According

to Dr. Salmon,[8] in his year book, Department of Agriculture, 1900, no case had occurred in Berlin since 1883. The same report states that in Sweden previous to 1870 there were 8 or 10 deaths annually from hydrophobia. Laws were then enacted and enforced, and there have been no deaths since.

Literature on the disease in the United States would not indicate that its seriousness or frequency has been properly appreciated by the medical profession. For the year ending May 31, 1890, there were found among incomplete records 143 deaths from hydrophobia in the United States. Twenty-one died here in Massachusetts and 16 in Georgia. Incomplete records of 73 cities between 1890 and 1899, including in some cases the first half of 1900, show 230 human deaths after eliminating doubtful ones.

In Massachusetts, between 1857 and 1880, I have found records of 54 deaths and during the last 20 years there have been at least 60 more with many exposed cases under observation and treatment at present. At least 100 persons have been bitten by rabid animals in Massachusetts during the past year. At a later date I shall be able to present to you more complete data on the prevalence of the disease in this country.

It is true that the layman would need a good deal more information on the subject to support legislation for the eradication of the disease, just as it has been necessary to educate them regarding the infectiousness and rational treatment of tuberculosis. It is a duty incumbent upon us to furnish them with such knowledge that they may assist us in obtaining proper laws for its eradication, and it is upon us, who have in the past secured the many sanitary laws for the public welfare, that the duty devolves of actively guiding into existence such national and state laws as the following: *

1. Control of the disease in the United States to be placed under the supervision of the Chief of the Bureau of Animal Industry at Washington, as are other epizoötic diseases, such as foot-and-mouth disease, according to the Act of Congress of May 29, 1884.

2. Full authority vested in the state cattle or other appointed commission to act as may be necessary for the eradication of the disease, in conjunction with the United States Bureau of Animal Industry at Washington, whenever rabies appears in the state.

3. All licensed dogs to wear collars and metal plate of special form, that they may be readily recognized.

4. Prompt capture of all dogs not properly tagged, with subsequent humane destruction, unless properly licensed within a short time.

5. Efficient muzzling of all dogs unrestrained in public places for a period of at least one year.

6. Dogs imported from countries other than those from which rabies is excluded to be quarantined for six months.

As Massachusetts is not isolated, and our dogs at the borders of the state are often infected by or infect dogs in contiguous states, interstate regulation under the supervision of the chief of the Bureau of Animal Industry at Washington seems to me to be the only efficient method of eradicating the disease in this and other states.

In Berlin its eradication was made effectual by conjoined action on the part of Prussia, and in Great Britain by like action of England, Scotland and Wales.

Dr. Peters [9] in his excellent address on "Rabies" before the Massachusetts Board of Health at a recent meeting quotes Dr. Cope, Chief Veterinary Officer of British Board of Agriculture, as saying: "It may truly be said that the board has never undertaken a duty which has rendered so great a service to the community of this country from the point of view of human health as the extinction of rabies in the dogs." Dr. Cope died recently. The protection he gave to man and dog against rabies can never die. Let us furnish our citizens that same protection. Let us answer now that question that was asked fifty years ago and promise those that trust us as their sanitary guardians that both human and canine life shall be protected by the ægis of the law.

* Since this paper was read, these six suggestions for legislation were presented in the form of resolutions at the fifty-eighth session of the American Medical Association at Atlantic City, through the courtesy of Dr. Richard C. Cabot, delegate from Massachusetts. They were favorably acted upon by the House of Delegates and are now in the hands of the Legislative Committee, which will do what it can to carry out the declared wishes of the American Medical Association in national and state legislation.

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THE UTERO-SACRAL LIGAMENTS.*

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IN accepting your kind invitation, so graciously extended to me through Dr. Greenwood, to talk to you this evening, I was influenced to utilize this theme by two considerations: first, the decided importance of the subject itself; and second, by the surprising and very gratifying interest

* Read by invitation before the Waltham Clinical Club.

manifested when I demonstrated the technique of their shortening in a case of retroversion at the Free Hospital for Women last June, before members of the American Medical Association during its Boston session. I am, perhaps, still further influenced by the fact that all definite knowledge of these ligaments seems to be very strictly confined to the gynecologists, and by no means all of these latter appreciate them at their full significance. For example, to show the position not only of the general practitioner, but also of others, not a great while ago one of Boston's leading surgeons of the younger generation referred a patient to my Out-Patient Clinic at the Free Hospital for Women and I returned her with a diagnosis of chronic inflammatory thickening and shortening of the utero-sacral ligaments and advised, in connection with other operative treatment, their section. The patient was promptly returned to me, with the request to operate and a frank avowal that he knew nothing about operations on these ligaments.

Their anatomy is either misunderstood or not understood at all. I have found by repeated conversations that most physicians regard the utero-sacral ligaments as very vague, inconsequent, peritoneal folds, which they have never seen outside of text-books, and possibly the dissecting-room, and have never felt. The first portion of this postulate is entirely wrong. They are very definite, not peritoneal, and very efficient under proper circumstances. While Bovée has gone very elaborately into their complete and minute description for general purposes of usefulness, I prefer Deaver's description, which is as follows: "The utero-sacral ligaments are flat, muscular bands, which extend from the uterus at the level of the internal os, beneath the layers of the recto-uterine ligaments, to the sides of the sacrum, opposite the lower borders of the sacro-iliac articulation. In the first part of their course they are in relation with the lateral walls of the pouch of Douglas, and finally run on either side of the rectum, near the junction of the sigmoid flexure and the upper portion of the rectum."

In this description he very properly emphasizes the distinction between the true muscular utero-sacral ligaments and the false peritoneal portion, which he describes as the above-mentioned recto-uterine ligaments in the following words: "The false posterior or recto-uterine ligaments are composed of peritoneum, are two single serous layers which pass backward from the posterior surface of the uterus and vagina to the upper portion of the rectum, where they are continuous with the peritoneal coat of the rectum. These folds of peritoneum form the lateral boundaries of the pouch of Douglas. External to each of these false ligaments are found the true, or muscular, utero-sacral ligaments, extra-peritoneal connective tissue and anastomosing branches of the uterine and hemorrhoidal vessels."

Deaver's language is too plain to leave any doubt as to the actual muscular structure of these ligaments and physiology has taught us that muscular tissue is not furnished anywhere throughout our bodies, without definite purpose and definite actions.

I believe that I am doing you no injustice when I express the belief that very few of you have ever considered the true utero-sacral ligaments as an entity apart from the very unimpressive peritoneal folds, which become visible from above when the uterus and rectum are widely separated. Realizing their muscular structure necessarily modifies our entire conception of their physiology.

Furthermore, the opinions of Testut, in France, and of Nagel, in Germany, fully confirm and even emphasize the correctness of Deaver's and Bovée's descriptions.

In the light of this anatomy and recent gynecologic surgery the physiology of these ligaments has become definitely known and indubitable. They certainly play an important rôle, not only in the support of the uterus, but also in the maintenance of its proper axis. As this latter point will come up later we will consider it at that time.

The pathology of these structures, considered individually, is changed from that of the peritoneum to that of muscular tissue, but since, as a matter of fact, the line should not, arbitrarily, be so strictly drawn between the true and the false as is done anatomically, we have a mixed pathology in practically all inflammatory lesions of these structures, and I shall endeavor to convince you later that at least one condition which has for years been considered pathological is in reality but a fine example of the physiology of the muscles comprising these ligaments.

The pathology should be divided into the congenital and the acquired. They are relatively frequently the subject of developmental arrest, and I am unable to say whether the arrest is prenatal or post-natal, — whether in a given case the original norm never obtained, or whether at birth the anatomy was normal but an arrest occurred at the pubital development of the other allied structures. The developmental lesion which is most commonly met and of the greatest practical importance is an improper insertion into the uterus, being attached to the uterus above or below the level of its normal attachment.

The acquired forms of pathology almost invariably originate in inflammatory processes reaching the ligaments by extension from contiguous structures, which structures may normally belong in contiguity with the ligaments, or which may have become adjacent to them only by antecedent pathological displacement, as for instance in the case of a prolapsed ovary or tube.

The principal gross manifestations of such inflammation are tumefaction and rigid muscular contraction, the tumefaction being due in part to edema and in part to the thickening consequent upon the muscular foreshortening.

To proceed from generalizations to more specific consideration of individual lesions, let us first consider contraction.

CONTRACTION OF THE UTERO-SACRAL LIGAMENTS.

(*a*) *Inflammatory contraction* is well understood and has been repeatedly described by vari-

ous observers. It is due to an extension of contiguous inflammation usually from an inflamed ovary, which, through its tumefaction and consequent increased weight, has prolapsed and so come into close apposition with the ligament. And there is a very intimate relationship between a prolapsed ovary and the utero-sacral ligament of the same side. The most immutable attachment of the ovary is by its ligamentum proprium to the cornu of the uterus, and in the downward course of the prolapsing ovary this ligament must form the radius of the arc through which it descends, and the length of this ligament is such that, the uterus remaining in anything like a normal position, the ovary will impinge upon and often rest upon the outer aspect of the recto-uterine fold and its subjacent utero-sacral ligament. If then the ovary be inflamed, or later become inflamed, the recto-uterine fold becomes the seat of a localized peritonitis, in which commonly the subjacent connective tissue and the true ligament become involved. This localized peritonitis, of course, results in an adherent ovary. Should the uterus be more or less retroverted, the approximation of the fundus to the sacrum permits the ovary to fall deeper into the pelvis, and it thus reaches the cul-de-sac of Douglas and rests upon the median aspect of the recto-uterine fold instead of the outer aspect as above, but the advance of the process is in no way affected.

The same sequence of events is also possible in those forms of sacro-salpinx in which, through adhesive inflammation, a collection of fluid, either pus, blood or serum, becomes saculated in or near the fimbriated end of the tube. The proximal portion of the tube forms the radius of the arc in this instance. Moreover, digital differentiation of these two lesions, per vaginam, I have always found impossible, unless the other organ could be distinguished in another location. Of course the two very commonly co-exist.

In cases in which the inflammatory processes in tube or ovary are still active, the contraction of the utero-sacral ligaments can merely be considered as a complication and no special individualized treatment can be administered, and coincident treatment seems advisable only when it is felt that the inflammatory disorganization has reached such a degree that spontaneous resolution cannot take place on the removal of its cause.

A cause of contraction which, so far as I know, has never been mentioned by any one until I last month submitted a paper entitled, " Contraction and Shortening of the Utero-Sacral Ligaments. A Suggestion as to Etiology and Treatment," is what I like to term:

(*b*) *Defensive contraction.* — In this paper I explained at length the nature of this form of contraction to which I wish to refer briefly here. This form of contraction came to my attention in perfecting a treatment for chronic endotrachelitis and depends entirely upon a correct realization of the relatively strong muscular structure of these ligaments. By the contraction of their muscular fibers the cervix, and to a lesser extent the lower portion of the uterus, is strongly drawn backward and upward into the hollow of the sacrum and immobilized. I have many times observed this position of the uterus, commonly referred to in the text-books as retrocession, retroposition, in my observation of cases of endotrachelitis, and finally began to realize that the uterus returned to a normal position, owing to a relaxation of these ligaments very promptly after the cure of the endotrachelitis. In other words, the ligaments, although much shortened and thickened, rigid, readily palpable and very sensitive, were in reality never the seat of a true inflammation at all, but were merely contracted, following the natural law of immobilization in the defense of an inflamed cervix.

Relaxation. — This is a subject regarding the etiology and pathology of which I am able to learn practically nothing either by observation of the great number of cases seen or by reading. We all realize that it is an important factor in every case of retroversion and retroflexion and prolapse, but know practically nothing of its antecedents. I say in retroversion and retroflexion, because it is largely the degree of relaxation of these ligaments which determines the difference. When the ligaments are freely relaxed retroversion results, but when this relaxation is slight or absent, the fundus may be forced backward, but the cervix cannot move forward and so the uterus becomes flexed.

One fact regarding this relaxation is important, and that is that in cases of retroversion known to be of very long standing and of extreme degree I have never yet failed to find them sufficiently firm and of sufficient caliber to permit of their comparatively easy manipulation. This is a fact which I think many who have not had personal experience in their operative manipulation have failed to realize. Everyone seems to regard these ligaments as an operative bugaboo.

The diagnosis of lesions of these ligaments is usually very easy. The only difficulty is encountered in the purely inflammatory cases, in which the prolapsed tube or ovary and the recto-uterine fold as well as the utero-sacral ligaments are all inextricably coalesced into a tender mass behind and beside the cervix, but fortunately it is only in those exceptional cases in which the ligaments require coincident section while operating for the more serious and primary condition that such differentiation is necessary, and it can thus be made most advantageously after the obscuring adhesions have been broken up and the ligament so exposed as to be amenable to inspection, as well as direct palpation.

In those cases of inflammatory contraction, in which the original causative inflammation has resolved, leaving the chronic condition in the ligaments and in those in which the causative lesion does not mask the true condition of the ligaments, the diagnosis is relatively easy. The first thing which attracts attention is the retraction of the cervix far back into the hollow of the sacrum and to a variable extent upward. The first impression is as to the lessened accessibility of the cervix. Generally deep insertion of the examining finger with strong upward forcing

of the perineum is required to reach to the full depth of the posterior vaginal fornix, while at the same time the uterus is being forced downward by the external hand over the hypogastrium. Having reached the apex of the posterior fornix, pressure made upward and forward with the tip of the finger, in such a way as to draw the cervix out from the sacrum, will be found to cause an altogether unusual degree of pain; while at the same time, if the tip of the finger is carried outward about one-half inch from the median line, a cord-like structure will be felt, which is very firm, very tender and in diameter may vary from one-eighth to one-half inch or even larger. Its antero-posterior linear feel as well as its characteristic resilience instantly distinguish it from prolapsed appendages, neoplasms or fecal masses in the rectum or sigmoid.

The pain spoken of above upon drawing the retrocessed uterus away from the sacrum deserved fuller mention. The finger-tip should be placed against the posterior aspect of the cervix so low down that in the manipulation no pressure can be made directly upon the suspected ligament, and by the flexion of the finger the cervix drawn sharply forward. If the ligament is diseased this traction causes intolerable pain and the patient will involuntarily exclaim and raise the entire hips off the examining table in her efforts to lessen the tension on the ligaments. On the other hand, such traction is either inoffensive or only mildly painful in adnexal lesions.

Furthermore, inasmuch as it is no more possible to distinguish the normal utero-sacral ligaments than it is the normal broad ligaments, the mere fact of being able to distinguish them on palpation is evidence of some pathological condition.

One further lesion is seldom recognized and is yet easy of diagnosis. This is the too high insertion of these ligaments with the resultant retroversion. The axis of rotation of the uterus in its antero-posterior versions is very nearly at the level of the internal os, but in reality a little above it at the point of insertion of the strong musculo-fibrous base of the broad ligament, which the Germans so wisely designate the " cardinal ligaments of the uterus." Normally the utero-sacral ligaments are inserted below this axial point, keeping the cervix behind the axial point and hence the fundus anterior to this point, or in what is commonly characteristized as normal anteversion. The contraction of the utero-sacral ligaments draws the cervix backward at the same time that the round ligaments draw the fundus forward after the fundus has been displaced backward; as, for example, by distention of the bladder. In those cases, therefore, in which, through arrest of development, faulty development or faulty growth, their attachment is above the axial point, they as inevitably produce retroversion by drawing the body instead of the cervix backward. Usually in such cases the anterior vaginal and vesical attachments with the utero-vesical folds are correspondingly low, still further tending to a forward position of the cervix,with the consequent retroversion of the fundus.

This combination of abnormalities is surprisingly easily recognized and equally surprisingly seldom recognized. This is the one class of movable retroversions which can never be cured by Alexander's operation alone, and which through improper attempts to do so has brought that operation into an undeserved disrepute, just as its improper employment in adherent or otherwise complicated cases of retroversion has.

The recognition of this form of retroversion depends upon the realization of an abnormally deep posterior vaginal fornix, with usually a very high attachment of the vagina to the uterus posteriorly, together with a very short anterior portio vaginalis reaching in some extreme cases almost to an entire absence of any anterior lip to the cervix, the vaginal wall seeming to start from the very border of the os externum. On replacing the uterus it is much easier to distinguish these characteristics, and unless there are or have been inflammatory complications resulting in adhesions, such replacement is easily effected bimanually, but the uterus will return promptly to its abnormal position. As would be expected, pessaries are not well tolerated. This form of retroversion is spoken of as " congenital retroversion."

The diagnosis of defensive as distinguished from inflammatory contraction depends upon the realization that it is only a symptom of some more serious condition, most commonly endotrachelitis, and especially upon the recognition of this original lesion, of which it is a symptom, and finally upon the exclusion of the inflammatory form of contraction through the lack of evidence of past or present contiguous inflammation.

The treatment may be palliative or operative, according to the individual case. In those cases in which an inflammatory contraction is consequential to a mild inflammatory condition in the appendages, which is itself amenable to non-operative measures, the complicating contraction will often, if not of too long duration, yield *pari passu* with the adnexal lesion. In such cases no special treatment need be instituted until the adnexal lesion has been cured, since the packings with or without medication, which best serve to cure the adnexal conditions, also relieve the ligaments. After-treatment is no longer needed by the original condition if, as often happens, a certain degree of contraction persists. I have seen most benefit from a dressing which I call an ichthyol T. A firm roll of non-absorbent cotton two inches long and one inch in diameter is thoroughly smeared with a mixture of ichthyol and glycerin and placed transversely behind the cervix in the posterior vaginal fornix and sustained in this position by a similar roll, about four inches long, which vertically fills the vagina down to the bulbo-cavernosus muscles. Threads are attached to each roll, so that they may be removed by the patient after about seventy-two hours.

The treatment of defensive contraction, since it is itself a symptom, resolves itself into the removal of the disease, of which it is a symptom. In the vast majority of cases, then, our problem is

the cure of an endotrachelitis, and I have found no treatment so prompt and permanently efficacious as the little operation with the specially designed instruments which I described last year.

The operative treatment of contraction of the utero-sacral ligaments is confined to a very small number of cases of such long standing that all manner of palliative treatment must fail, as the ligaments have become so infiltrated by fibrous tissue that relaxation is a physical impossibility. It rarely occurs in such cases that operation should be undertaken for their relief alone. Usually grave and long-standing antecedent or complicating lesions demand operative intervention, in which case the simple cutting of the ligaments either from above, during a celiotomy, or from below in a vaginal section, is very simple. In those infrequent cases in which their section is indicated, a simple vaginal cutting through an ample transverse vaginal incision is very easy, without invading the peritoneal cavity at all. It must be borne in mind that in this class of cases the ligaments are much larger than normal and hence more obvious and more easily manipulated. The cervix should be kept well forward for two or three days following the section of the ligaments. The opening of the abdomen for the section of these ligaments is entirely unnecessary, and for this alone seems to me unjustifiable.

The above small class of cases represents the easiest possible operations upon the ligaments.

In relaxation of these ligaments I am skeptical of any form of palliative treatment accomplishing anything except in very recent cases. In such recent cases my method of palliative treatment is by means of a systematic packing of the vagina so as to sustain the replaced uterus in its normal axis and at the same time avoid all tension upon the ligaments. Thus pessaries I do not use in these cases for mechanical reasons. The pessary sustains the uterus in normal anteversion by so forcing upward and backward the vaginal wall that, through its attachment, the cervix is thus drawn backward and, of course, the fundus thrown forward. But in order to accomplish this the transverse bar of the pessary must push a roomy vagina so far upward that the utero-sacral ligaments are stretched over this bar and hence have no opportunity for resolution to their normal length and strength. On the other hand, with the packing installed as I have elsewhere described, the cervix is held properly back, and yet the posterior vaginal fornix is empty and the ligaments have all possible chance of recovery of their normal tone. To briefly repeat this method of packing, it is as follows: One of the wool segments of the "kite-tail" dressing is placed in each lateral fornix and one in front of the cervix, and then the vagina is systematically packed down to the level of the bulbo-cavernosus muscles, where the last layer is disposed as a transverse bridge, thus leaving the bladder and rectum free and the perineum free from the downward pressure of the dressing.

Massage, other than that passively performed by such a packing, has not proved satisfactory in my experience.

The operative shortening of these ligaments is intermediate in difficulty between their easy section and their difficult transplantation when faultily inserted. The difficulty lies in their softness and attenuated diameter, while these difficulties are compensated by the free mobility of the cervix. Here, as in shortening, it cannot be too emphatically stated that no justification exists for the opening of the abdomen for any operation involving these ligaments alone, while it is equally true that all these operations can be done from above when the abdomen is already open for other reasons.

In order to shorten these ligaments a free transverse incision is necessary at the cervico-vaginal junction. Through this incision, after working upward through the loose connective tissue between the uterus and the rectum, the ligaments are very readily detected by the finger, especially if they are intermittently tightened by traction upon the cervix. They are then transfixed by a tenaculum and readily drawn into sight. Some operators advise resection of a piece of the requisite length and approximation of the distal segment to the uterus by suture. This I do not like, but prefer to transfix the ligament at the proper point to give the requisite shortening with a suture, and then with the same suture take up a firm hold on the cervix just below the normal insertion. Before tying the first suture, similarly place the second in the opposite ligament, thus saving the advantage of the free mobility of the cervix. Finally, tie both sutures. By this technique three things are accomplished. If the sutures fail of their purpose the patient is at least no worse off than originally, which may not be true if the ligaments were cut. The folded ligament forms adhesions and becomes stronger than originally, and lastly the attachment being slightly below the normal attachment gives them a little greater leverage in drawing the cervix backward.

In transplanting the faultily inserted ligaments the same technique is followed up to the point of inserting the sutures. It is very seldom that the ligaments are so short as to need cutting at their uterine insertion in order to get sufficient length to reach to the new attachment. I have never seen such a case. The ligaments being as freely as possible exposed, which is much less than in the preceding class of cases, because of the less mobility of the cervix, estimate the distance between the point of faulty insertion upon the back of the uterus and the lowest point to which they can be sutured and transfix them with the suture at this distance from their uterine ends. Pass the sutures deeply into the cervical tissues at the elected point for the new attachment, and finally tie after both sutures have been placed.

In addition to the above transplantation some form of plastic work is almost always necessary in these congenital retroversions, such as making a deep transverse incision and closing it vertically, thus shifting the cervico-uterine attachments upward. Shortening of the round ligaments by one

technique or another is often a wise or necessary coincidental treatment.

In the close watching of these congenital retroversions after operating as above, some very interesting anatomical data have been observed. We have all heard of the strong influence exerted by the strong pelvic facia in determining the normal axis of the uterus. That is, the uterus has been spoken of as pushed down through these fasciæ at a certain angle, which their attachment tends to perpetuate. These cases illustrate that point beautifully. The cervix was originally " pushed down through " at a wrong angle. On examining these cases six weeks to two months after operation I have invariably found the fundus forward; but the cervix still showing a decided tendency to a forward position, in many cases almost a true anteflexion and without any treatment, in five or six months the cervix comes down to its normal relation to the body in every case.

THE CONTAMINATION OF THE AIR OF OUR CITIES WITH SULPHUR DIOXID, THE CAUSE OF RESPIRATORY DISEASE.

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THE importance of sulphur dioxid as an impurity of the air of our cities and its injurious effects upon the organs of respiration is a subject that has not received the attention in works on hygiene which it demands. Most of the works on hygiene give us but a very meager information or none at all of sulphur dioxid as an impurity of the atmosphere. They chiefly mention and describe its antiseptic and disinfectant properties. The writer has been studying the noxious effects of sulphur dioxid as an impurity of the atmosphere for the past ten years and he had arrived at the conclusion that it is one of the most potent causal factors of asthma. Some of his observations were published elsewhere in 1902. It is only within the most recent years, especially through the investigations of Kionka,[1] that the importance of the toxic properties of sulphur dioxid in the form of sulphites has been made apparent and established.

The atmosphere, being a mixture of gases, gives, according to the most recent investigations, the following average composition in one hundred volumes:

Oxygen	20.60	volumes.
Nitrogen	76.90	"
Argon	1.00	"
Carbon dioxid	0.04	"
Aqueous vapor (about)	1.46	"
Ozone, hydrogen dioxid Nitrogen acids Marsh gas Sulphur dioxid (in towns and volcanic districts) Hydrogen sulphid	traces.	

Besides the three above-mentioned elements there are in the air hydrogen gas (according to Gautier 0.015%), neon, krypton, xenon, helium and coronium, which have only a scientific interest. According to Mendeléeff's " Periodic Law " a number of other elements are believed to exist in the atmosphere, but remain to be discovered by the chemist in the near future. Dust, being a normal constituent, is found in the air at all times.

PRESENCE OF SULPHUR DIOXID IN SMOKE AND FOG.

Since the air is the great receptacle for all gaseous emanations, other substances, in the vapor or solid form, may be discovered in it by chemical and microscopical means. Sulphurous anhydrid or sulphur dioxid, for instance, can often be traced in it, being derived from domestic, manufacturing or tellural sources. In the combustion of coal, which contains iron pyrites (FeS_2), and coal gas, which contains hydrogen sulphid and other gaseous sulphids, the sulphur is oxidized and converted into sulphur dioxid, which passes into the air in which it is rapidly diffused. The air of every large city, especially in the manufacturing districts, becomes polluted with free sulphur dioxid in variable proportions. To form even an approximate idea of the enormous quantity of waste matter poured into the air of a city like London, it is worth while mentioning the statement quoted by Egbert,[2] that " It has been calculated that for every ton of coal burnt in London something like three tons of carbon dioxid are produced," and as the city's coal consumption is over 30,000 tons per diem, we can see that its atmosphere must receive the enormous daily contamination of about 300 tons of soot and 90,000 tons of carbonic acid. From this calculation the writer has made another proportionate calculation from which he finds that at least 2,700 tons of sulphur dioxid are produced at the same time, helping to augment the further daily pollution of the atmosphere of that city.

Sulphur dioxid, after uniting with the oxygen and aqueous vapor of the air, is converted into sulphuric acid.

A portion of the sulphuric acid, says Thorpe,[3] is probably derived from the oxidation of the iron pyrites, which is generally present in coal to the amount of 3%, although some coals contain much larger quantities of this substance. The amount of sulphur which it contains has an important bearing on the value of the fuel in nearly all its applications. When coal is burnt the sulphur escapes as sulphur dioxid. This gas exerts a very detrimental action on vegetation, and by its proneness to pass into the state of sulphuric acid in the atmosphere it brings about the rapid deterioration of the stone-work on which it may be precipitated. It has been calculated that as much as 20 tons of oil of vitriol (sulphuric acid), produced by the combustion of coal, are annually brought down by the rain in a large city like Glasgow or Manchester.

Dr. R. Angus Smith[4] has shown that in large towns the amount of sulphates is largely increased, owing to the combustion of coal which contains iron pyrites. The nature of the sub-

stances present in the rain has also been investigated by this indefatigable worker in air analysis, who has shown that the examination of rain water affords a method of determining the impurities in air, and hence probably its comparative sanitary value. He has made a number of interesting analyses to show the general character of the rain (and therefore of the impurities of the atmosphere) in various parts of Great Britain. Thus the results of the average number of determinations gave for the rain of London 3.87 parts of sulphuric acid in a million (?), for Liverpool, 11.56 parts in a million, Manchester, 10.17 parts in a million, and Glasgow 15.13 parts in a million. He further states that the rain water in large towns is not infrequently acid, owing to the presence of sulphuric acid. When rain contains 40 parts per million of free acid, the vegetation of the district is rapidly affected. Thorpe says that the sulphur compounds in coal gas are a source of much annoyance. When burnt they give rise to acid products which rapidly corrode metal fittings, decorations, tapestry, painted woodwork, paper, gildings of books, etc.

VARIABLE PROPORTION OF SO_2 IN THE ATMOSPHERE OF CITIES.

The proportion of carbon dioxid is an index of the amount of sulphur dioxid in the atmosphere. When the amount of carbon dioxid is increased the proportion of sulphur dioxid is correspondingly augmented in the air of cities and manufacturing districts. Every ton of coal in burning yields its proportionate volume of carbon dioxid and sulphur dioxid, for every sample of coal contains a certain percentage of sulphur in the form of iron pyrites. The proportion of SO_2 in the atmosphere of cities is not constant throughout the year. There is more SO_2 in the air in winter than in summer. There is an excess during heavy fogs, attaining, at times, almost the CO_2 equivalent of the atmosphere. As the amount of carbon dioxid varies in the cities, so also does the quantity of sulphur dioxid vary. *Pari passu*, during the night the sulphur dioxid increases in exact ratio with the progressive increase of carbon dioxid. During the prevalence of thick fogs, the air being in a stagnant condition, the sulphur dioxid equivalent is correspondingly increased with the carbon dioxid content. As much as 8 or 9 volumes of carbon dioxid in 10,000 volumes of air having been noticed on a foggy day, we infer from this likewise a proportionate increase of sulphur dioxid, there being, however, no recent exact quantitative data of sulphur dioxid determinations in the atmosphere at hand.

Bloxam[5] says that when damp air is chilled the water is deposited from it in the form of fog unless the air be optically pure, when no condensation of water occurs. It would appear from this that the dust particles in the air form nuclei around which the aqueous vapor can precipitate, much as crystals form around a particle in a supersaturated solution. The aggravation of a fog by smoke may perhaps be partly due to such a cause. It has been shown that the dust particles are not alone in causing precipitation of aqueous vapor, many gases which are free from suspended particles having a similar effect. Sulphur dioxid is an example; this gas is always present in London air, being a product of the combustion of coal containing iron pyrites; it is more abundant in foggy weather, but whether it is a cause of the fog or is merely retained by it remains uncertain.

The writer, however, believes that sulphur dioxid, being a very heavy gas, with the specific gravity of 2.25, is alone capable of creating a fog, as is at once shown when it is brought in contact with the atmosphere, from which it absorbs aqueous vapor, causing dense, heavy fumes. The dust or carbon particles, coming in contact with this acid vapor, enhance its gravity materially. Fog usually collects in the lower portions of a city, especially in depressed localities known as "hollows," where it remains until dispersed by air currents. The reason for all this is explained by the physical properties of heavy gases. Fog also contains an excess of carbon dioxid, having a specific gravity of 1.524; it being consequently one-half heavier than atmospheric air. Fog also contains an excess of sulphur dioxid, having the specific gravity of 2.25; the latter gas is, therefore, two and a quarter times heavier than air.

DELETERIOUS EFFECTS OF SULPHUR DIOXID UPON THE RESPIRATORY ORGANS.

It is a well-recognized fact, says Harrington,[6] that during periods of heavy fogs in manufacturing centers, the morbidity and mortality from respiratory disease are increased very greatly, and that, as the atmosphere clears, a sharp decline follows. In London, for example, the usual death-rate from all causes has been known to be almost doubled during a fortnight of continued dense, smoky fog, and then return to its normal figure with the advent of clear weather, the increase being due particularly to bronchitis and other affections of the respiratory tract, attributed to the irritating influence of the finely divided particles of soot and acids which accompany them.

The active constituent of the pungent, irritating vapors composing the fog of our large cities is largely sulphur dioxid. Sulphur dioxid is a heavy suffocating gas with a disagreeable odor. When inhaled in the pure state it is poisonous; when diluted with air it produces coughing and severe irritation of the air passages.

The chief symptoms of poisoning with sulphurous acid, says Cushny,[7] are those of irritation of the mucous membranes. In poisoning from the inhalation of the anhydrid, on the other hand, the symptoms are chiefly from the respiratory tract. Even in five parts in 10,000 it acts as an irritant, causing sneezing, coughing and lachrymation, and in somewhat greater concentration it becomes entirely irrespirable; still smaller quantities in the air cause bronchial irritation and catarrh when inhaled for some time.

Sulphur dioxid according to Sollmann[8] who quotes it from Lehmann's work, is very toxic by

local irritation, producing bronchitis and pneumonia. SO_2 produces extreme discomfort in proportions as small as .0001 % (0.1 % being fatal).

Not having Kionka's "Toxikologie" and Kobert's "Intoxikationen" at hand, Dr. Torald Sollmann was so kind and obliging as to place these works at the writer's disposal, from which he has made free translations.

According to Kionka,[9] 0.4 to 0.54% occasion in animals severe dyspnea; recovery, however, occurs if not too long continued. The proportion of 0.62% killed mice after six hours, 0.64% after two hours, and 0.8% even after 20 minutes. Rabbits appeared to be somewhat less susceptible to the action of sulphurous acid. They succumbed first after a proportion of 2.4 to 2.9% after four hours. The obduction shows that the pulmonary capillaries are seriously impaired, while the blood itself has undergone gross chemical changes in cases of fatal sulphurous acid poisoning in animals. When even minute quantities of the gas are inspired there is invariably difficulty of breathing (dyspnea), with cough and increased nasal secretion, etc. He says that SO_2 is a protoplasmic poison.

Kobert [10] says that the first experiments with the exact quantitative estimation of the inspired SO_2 were made by Ogata in 1884. Further experiments were made by K. B. Lehmann in 1893. When the proportion by volume is between 0.015 to 0.020 the sojourn in such an atmosphere becomes disagreeable and is with difficulty endurable to almost any one. When the proportion by volume is 0.03 to 1000 of the air it makes some persons decidedly ill after a few moments, especially parturient women, those suffering from stomach disease and susceptible persons, as an intense smarting comes on in the nose, with sneezing and coughing. The action of larger amounts was studied on animals. When the percentage of SO_2 by volume was 0.04 to the air, pronounced phenomena of poisoning showed themselves in mice, rabbits and guinea pigs. The proportion of 0.06% caused death in 6 hours and 0.08% was lethal in twenty minutes. The pathological manifestations were dyspnea, cyanosis and convulsions. Kobert mentions also the fact that the air of large factory towns contains always measurable quantities of SO_2. In winter the freshly fallen snow absorbs the sulphurous acid from the air and is slowly oxidized to sulphuric acid.

G. Wurtz has observed the constant presence of sulphur dioxid in the atmosphere of Paris, France (Compt. rend. 1885, 100, p. 1385).[11]

Dr. Sir Frederick Treves, lecturing before an assemblage for the abatement of the coal smoke nuisance, said on April 23 in London that he had seen the lungs of many persons who had lived in that city which were black from the surface to their innermost recesses. This not only made it more difficult to resist disease, but started disease. These conditions were entirely due to dirt and soot inhaled. Everybody knew the terrors of a London fog, he said. It would be merely a white mist but for the coal smoke, which gave it its fifthy, choking constituents. The London fogs killed people by thousands. Experiments showed that during a bad fog six tons of soot were deposited to the square mile.

Speaking of the effects of gaseous impurities in water, Bergey [12] says that sulphur dioxid, when present in considerable quantities, produces disease of the bones in cattle.

Kionka has observed that in small, long-continued doses the sulphites affect seriously the lungs, circulation and kidneys and have been forbidden by the Imperial Board of Health of Germany. During the recent eruptions of Mt. Pelée (1902) and Mt. Vesuvius (1906) enormous volumes of gases, largely composed of sulphur dioxid, were poured into the atmosphere, which greatly increased the suffering of frightened humanity and was the cause of suffocation and death of many thousands of victims. Like many other poisonous substances, there are persons, when exposed to sulphurous vapors in their daily work, who establish a gradual tolerance to the gas and take no notice whatever of an atmosphere in which it is present to such an extent that persons not habituated to it cannot breathe it. To some persons very small amounts of it cause difficulty of breathing in the form of wheezing and cannot be tolerated any great length of time.

It is a well-established fact that some persons have an individual idiosynerasy, on account of an abnormally hyperesthetic sensitive nasal and bronchial mucous membrane, to the inhalation of certain emanations which act as irritants, causing paroxysms of asthma. The inhalation of minute quantities of sulphur dioxid will promptly bring on an attack of asthma in certain susceptible persons. Its presence and cognizance are very important factors to those who are thus so easily affected.

Asthma is essentially a respiratory neurosis, being due to an abnormal irritability of the respiratory center, manifesting itself in a transient catarrhal congestion of the bronchioles (whose musculature is under the control of the accessorio-vagus, in which the constrictor fibers predominate), and which may be produced reflexly by irritation of the mucosa of the nose, larynx and bronchioles.

In these days of popularizing science, young students, working in chemical laboratories, should be earnestly admonished to be very careful in the handling of chlorine gas, bromine vapor and nitrous acid fumes, the inhalation of which being fraught with danger is liable to be the *fons et origo mali* — of a so-called *pars tetricus* — somewhere in the respiratory mucous membrane, giving rise, later on in life, by repeated insults, to a permanent alteration, expressed in the form of a *pars minoris resistentiæ*. Workers in bromine works are said to be peculiarly liable to asthma.

EXAMINATION OF THE AIR FOR SULPHUR DIOXID. DETECTION AND ESTIMATION OF THE GAS.

Recently (during the early mornings of January 31 and February 12), when the fogs were so bad

in this city, it being virtually in a so-called "smoke-bank," the air being very irritable and exceedingly unpleasant and at the same time unfit to breathe, the writer exposed strips of moistened blue litmus paper to the atmosphere. In a comparatively short time these papers were colored decidedly red, showing the highly acid nature of the atmosphere. The outside window panes and roofs of buildings, when touched with moistened blue litmus paper, gave promptly a decided acid reaction. The outside window panes were sprinkled with distilled water which was again collected and filtered and treated with a few drops of bromine water and barium chloride solution, when a distinct precipitate of barium sulphate was obtained. In testing rain water with blue litmus paper the latter was instantly colored red. A sample of rain water was treated with barium chloride solution which gave a characteristic whitish precipitate of barium sulphate, proving conclusively the presence of free sulphuric acid.

The most delicate means at our command for the instant detection of very minute traces of free sulphur dioxid in the air is simply by the sense of smell.

It is stated in works on analytical chemistry that paper moistened with starch paste and iodic acid solution turns blue in air containing one part of sulphur dioxid in 3,000 parts of air. This test, however, after repeated trials, is not sensitive for very minute traces of SO_2, say 5 parts or less in 10,000 volumes of air. The writer has tried patiently a number of tests in the form of test papers, but he has not found one of them reliable for the detection of minute traces of the gas. Papers containing mercurous nitrate, potassium bichromate, potassium chromate (which turns coffee brown in color, and ultimately green), etc., respond only in dense fumes of the gas.

The amount of sulphur dioxid in the atmosphere may be determined volumetrically and gravimetrically.

Volumetrically, SO_2 may be estimated by shaking a given proportion of normal solution of potassium hydroxid in a measured vessel containing air, treating the solution with sulphuric acid (1:3), adding a little starch solution and then titrating with $\frac{N}{50}$ iodine solution until a blue color is produced. One cubic centimeter iodine solution is the equivalent of 0.00064 gr. of normal SO_2.

The proportion of SO_2 may also be estimated gravimetrically by precipitation as barium sulphate by the addition of barium chloride, bromine water having been previously added. "One milligram of barium sulphate is equivalent to 0.2748 milligram of SO_2." (Harrington.)

Briefly stated, the measured capacity of the air-contained vessel and the given amount of absorbing solution, with the observed barometric pressure and observed temperature, give the estimated volume of SO_2 in the air. It being customary to express results in parts per 10,000, the rate is determined by simple proportion. Specially constructed apparatus, like those used in the determination of CO_2 in air analysis, might be used for the estimation of free SO_2.

The United States Weather Bureau should take charge of the chemical examination of the atmosphere in every large city and make daily examinations (especially during the winter months) of the air by scientifically educated persons in order to attain its highest standard of efficiency. During dense fogs the air should be analized qualitatively and quantitatively in order to determine the presence of deleterious impurities, especially that of SO_2. The object of such work would be to trace the influence of the presence of abnormally increased impurities in the air and their effect upon public health. The various diseases of the air passages, including pharyngitis, bronchitis, pneumonia and asthma, are materially influenced by meteorological conditions.

LEGISLATION AND PREVENTION OF THE POLLUTION OF THE AIR.

Man disposes of his sewage and dejecta in a most peculiar manner by casting them into the streams and large bodies of water from which he derives his water supply. In a like manner he ignorantly pollutes with poisonous gases the very air he breathes!

It stands to reason that factories, manufacturing plants and other large industrial establishments modify seriously, by their excessive smoke, the atmosphere of cities by the addition of a deleterious gas like sulphur dioxid and they should, therefore, for hygienic reasons alone, be located at some distance from cities. The importance of smoke, says Harrington, both as a promoter of disease and on account of its corrosive and disfiguring action on buildings, and also on account of the obstruction of light, has led to much legislation and to the exercise of inventive genius for devising means for the prevention of its discharge in objectionable amounts into the atmosphere of cities.

In January, 1902, when we were suffering in this city from heavy fogs, contaminated with acid, suffocating gases, the city of St. Louis had the same trouble, where the responsibility of a city for maintaining a smoke nuisance was tested in court. Because the throat and lungs of a prominent singer were injured by smoke, the city of St. Louis and its chief smoke inspector were sued in a mandamus proceeding, asking that they be compelled to abate the smoke nuisance. Litigations on account of destruction of vegetation, especially of vegetables, garden-fruit and fruit-trees, have been often instituted against smelters and sulphuric acid works.

Instead of permitting colossal quantities of sulphur dioxid to go to waste by passing into the atmosphere, thereby occasioning serious atmospheric contamination and economic damage, means and ways should be devised to recover the enormous quantities of SO_2 thus lost. Industrial application should be made of SO_2 as in the case of carbon dioxid, CO_2. Sulphur dioxid could find many a useful technical application in the arts and industries.

Writers on hygiene and sanitation have paid but little attention to the subject of air vitiation by sulphur dioxid gas, consequently their information is very limited and it is no wonder, then, that one,[6] among the rest, has made the careless statement in his otherwise very excellent work on hygiene that its effects " are exerted more on the digestive (?) than on the respiratory function."

From the presentation of all these facts it will appear evident that the weight of evidence concerning the relation of this gas to public health indicates that its effects are really " serious if not lasting " on certain susceptible persons, and that its presence in atmospheric air is a positive menace to the hygienic welfare of beings.

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A CASE OF EXTENSIVE RESECTION OF THE STOMACH FOR CARCINOMA.*

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No accurate knowledge of the extent of malignant disease of the stomach and the chance of its complete removal can be obtained by any other than operative methods. The case reported below is primarily of interest because it presents a strong argument in favor of operation in all cases of gastric cancer, even those which are apparently hopeless. The emaciation, severe pain and persistent vomiting, associated with the exceptionally large, palpable, epigastric mass in this case discouraged the thought of anything but a palliative gastro-jejunostomy, yet on opening the abdomen it was found possible to do a radical operation and by resecting about two-thirds of the stomach to cleanly remove the diseased area, leaving a good margin of healthy tissue. The case is interesting also from a pathological and etiological point of view, inasmuch as it furnishes a striking illustration of the ingrafting of carcinoma upon a previous gastric ulcer. The co-existence of a benign and a malignant ulcer side by side is shown in Fig. 1.

It has been estimated that fully 50% of the cases of gastric carcinoma will give a history suggestive of previous ulcer of the stomach. A majority of the cases of cancer of the stomach show direct evidence of malignant disease developing on a previous ulcer. It is thought that in this case both ulcers were benign originally and that the cancerous degeneration set in not long before the time of operation. It is interesting, however, that it was not possible to obtain a history of long standing symptoms of indigestion. Undoubtedly much of the large mass felt in the epigastrium was due to chronic inflammatory thickening of the stomach wall; if the entire mass felt had been due to cancer there probably would have been no possibility of a complete removal of the disease, because of extensive glandular metastasis. The symptoms and signs, however, before operation were so markedly those of advanced

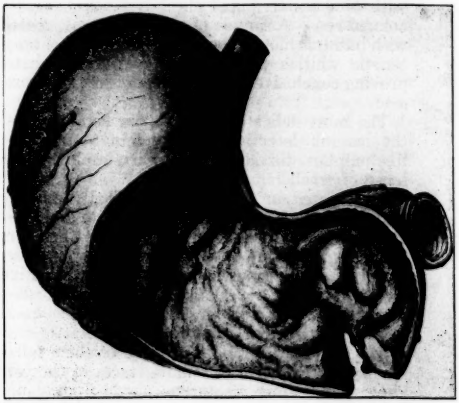


FIG. 1. The reconstructed stomach cut open from behind, showing the disease on the anterior wall.
Note the carcinomatous area near the pyloric end and the distinct benign ulcer toward the cardiac portion. Note also the marked thickening and infiltration of the anterior wall in general.

gastric carcinoma that one was justified in the belief that the case was one of hopeless cancer, demanding only a palliative operation. It is fair to state that a case presenting such a typical picture of inoperable carcinoma under the care of some physicians would not have received the benefit of a surgical consultation.

The fact that at the end of seventeen months after the operation the patient is alive and in apparently perfect health and engaged in hard manual labor justifies some hope of lasting cure. Such gratifying operative results ought to be reported, for only by so doing will practising physicians as a whole be convinced that it is their duty to send all cases of gastric carcinoma to the surgeon at the very first stages, even when the diagnosis is suspected only. As Mayo says: " In the history of medicine there is no recorded example of a case of cancer of the stomach cured by medical means. Of all diseases cancer of the stomach is most surgical, yet for some reason cases are sent to medical men, are entered in medical wards and subjected to treatment, which must result in 100% mortality.

*This case was shown at the clinical meeting of the staff of the Massachusetts General Hospital on Jan. 11, 1907, and a brief report appeared in the BOSTON MEDICAL AND SURGICAL JOURNAL, Feb. 7, 1907.

The various steps in the technique of the operation as shown may be worthy of note.

REPORT OF CASE.

History. R. J. McD., fifty-two years old, white, married, teamster by occupation, entered the South Surgical Service of the Massachusetts General Hospital on Dec. 19, 1905. By the kindness of Dr. Beach, the chief of the service, the writer was given charge of the case and allowed to operate. Family history unimportant. He had always been in good health until seven months previous, when he first began to have indigestion and pain in the epigastrium, worse after eating. When first noticed the pain would come from an hour to an hour and a half after taking food. The severity and duration of the pain depended somewhat on the kind and amount of food taken. Later there was almost continual pain in the epigastric region, gradually increasing in severity and shooting up and down the right side and into the chest and back. He had steadily lost weight. He began to vomit about six weeks before entrance and continued to vomit three or four times a day, without any definite relation to eating. The vomitus for the most part was undigested food, but dark brown material was vomited occasionally. For two weeks before entrance he had been able to retain no food and had endured great pain.

Examination. — A pale and emaciated man; weight, 108 lbs. Heart and lungs normal; liver not enlarged. A large mass, slightly movable, dull on percussion, readily palpated in the epigastrium. The muscles in the epigastrium and the right hypochondrium were held somewhat rigidly. No fluid was made out in the abdominal cavity. No glands could be felt above the clavicles. By the stomach tube 50 cm. of thick brownish fluid mixed with mucus was obtained. An examination of this showed free hydrochloric acid, 0.18%; the total acidity was 0.365%; the guaiac test showed blood. The fasting stomach contained 30 cm. Inflation showed a small and contracted stomach. Examination of the urine showed nothing abnormal. Pain and vomiting continued after entering the hospital, but was not so frequent or severe as before.

Operation. — Twenty minutes before anesthesia an injection of $\frac{1}{4}$ gr. of morphine and 1-150 gr. of atropin was given. Ether was the anesthetic used. During much of the suturing of the stomach wall it was found possible to keep the patient only lightly under ether. An incision 4 in. long was made in the median line. Upon exploration it was found that a large portion of the anterior wall of the stomach was involved in an irregular, nodular mass, which extended from the middle line well toward the pylorus and was nearer to the greater than the lesser curvature, and in addition to this the major part of the anterior wall of the stomach seemed thickened and infiltrated with disease; the whole stomach seemed sowewhat contracted. The extent of the diseased area is shown in Fig. 1, and is also shown, as well as the portion of the stomach resected, diagrammatically in Fig. 2. The stomach was not fixed by adhesions, except that in the gastrocolic omentum near the median line there were several enlarged glands adherent to the omentum and transverse colon. On microscopic examination these glands were pronounced simply inflammatory.

The steps of the operation are suggested in the diagrammatic illustrations accompanying this paper. Because of the presence of the diseased glands the gastrocolic omentum was tied off in sections first, care being taken to avoid the mid-colic artery. The enlarged glands and omentum were dissected off with care. The left gastro-epiploic artery was tied far out on the patient's left. After ligating the gastric artery as high up as possible the lesser curvature of the stomach was freed and the superior pyloric artery tied. The stomach and pylorus could then be lifted well, so that hot gauze pads could be placed in the lesser omen-

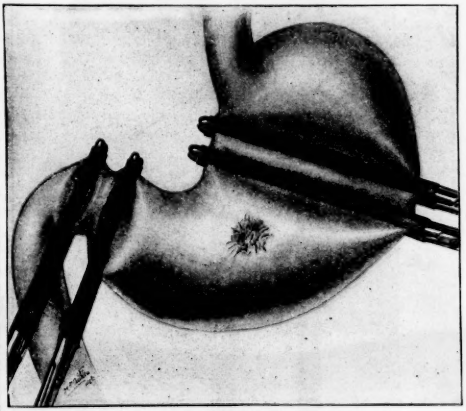


FIG. 2. Showing application of clamps and portion of stomach removed. The lines of division were between the clamps.

tal cavity. Two straight narrow bladed clamps were then applied at about the juncture of the pylorus and the duodenum and two similar clamps on the left end of the stomach. The position of the clamps and their relation to the diseased area is shown in Fig. 2. After

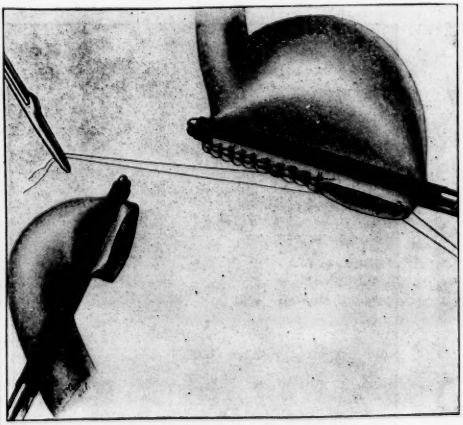


FIG. 3. Redundant portion of the stomach wound closed by continuous catgut suture through all the coats preliminary to the continuous Cushing stitch to the peritoneum.

the abdominal cavity was carefully protected with gauze pads the duodenum was divided between the clamps and the pylorus and stomach with considerable omental fat and glands attached were lifted up. The stomach was then divided between the remaining

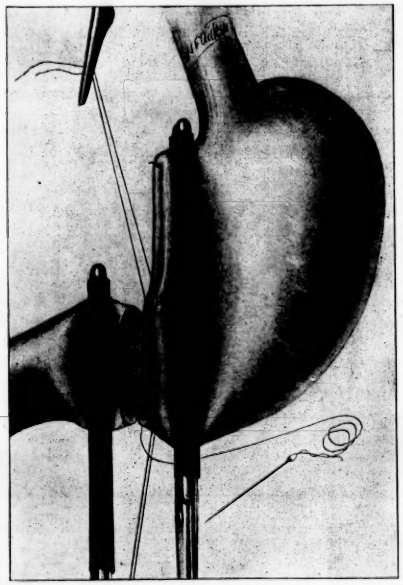


FIG. 4. The upper portion of the stomach wound has been finally closed by a continuous Cushing suture.
Note that approximation of the stomach and duodenum has been begun with the continuous through-and-through suture of catgut.



FIG. 5. Approximation completed by a continuous Cushing suture with the addition of an occasional interrupted Lembert stitch.

clamps. The cut edges of the stomach and duodenum were carefully wiped clean with sponges wet in salt solution. It was found that the stumps of the stomach and duodenum were sufficiently mobile, after freeing the duodenum as much as possible to allow approximation end to end, as shown in Figs. 3, 4 and 5. Accordingly, all idea of complete closure of the stump of the stomach and the duodenum followed by gastro-intestinal anastomosis was abandoned and the end-to-end suture method adopted, as shown. Only very rarely will the stomach be sufficiently movable to allow the use of this method without undue tension on the sutures. In the great majority of cases where such extensive resections are done it will be necessary to resort to gastro-intestinal anastomosis.

After the introduction of the guide stitches the upper or redundant portion of the stomach wound was closed by using first a continuous suture of chromicized catgut, followed by a continuous Cushing suture of Pagenstecher thread. Approximation of the duodenum to the lower portion of the stomach wound was made by a continuous suture of chromicized catgut through all the coats, followed by a continuous Cushing stitch of Pagenstecher thread. It was found necessary to use a few additional interrupted stitches of linen thread. After the removal of the pads the abdominal wound was closed in layers, without drainage, leaving a quart of hot salt solution in the peritoneal cavity.

At the end of the operation the patient's pulse rose to 120, but dropped to 70 on the third day, where it remained. The temperature did not rise above 99.2° F. after the operation and remained normal after the third day. In other words, there was no serious reaction from the operation.

After-treatment. — The after-treatment consisted of salt solution by rectum 6 oz. every four hours, together with nutrient enemata of white of egg, beef juice, peptonized milk and salt solution every eight hours. Within twenty-four hours hot water and albumen water in teaspoonful amounts were given by mouth and on the third day the patient was taking ½ oz. of water or albumen water every hour and retaining the enemata well. There was no vomiting.

The wound united by first intention and the stitches were removed on the eighth day. At this time he was taking full liquid diet freely. On the fourteenth day he sat up in bed and was up out of bed on the seventeenth day, when he was eating soft solids. Convalescence was uneventful and he was discharged one month from the day of the operation. He was then eating the regular hospital diet, with care as to amount. His weight on leaving the hospital was 118 lbs., or 10 lbs. over his weight on entrance.

Result.— This patient has been seen by me at intervals for the last sixteen months, and as was stated, he is apparently in perfect health. His present weight is 140 lbs. He eats anything and everything without any distress. He does not vomit and has no symptoms of indigestion. There is no evidence of a recurrence of the disease.

Pathological report.— The two ulcerated areas and extent of the disease are shown in Fig. 1. The large ulceration nearer the pylorus was 5.5 cm. in greatest diameter; its edges were raised and infiltrated. Microscopic examination of the indurated border showed masses of irregular tubular glands, with little fibrous or cellular tissue between them infiltrating the submucous layers of the stomach wall, — *adeno-carcinoma*. Close to this malignant ulceration was a circular depressed cicatrized area, evidently the seat of a former ulceration. Microscopic examination showed simply granulation tissue, without any evidence of new growth.

A DEPARTMENT OF SCHOOL HYGIENE.*

BY LUTHER HALSEY GULICK, M.D.,
Director of Physical Training, New York City Public Schools.

We are told by the Board of Health that over 30% of all children in the public schools have a degree of eye deformity sufficiently severe to interfere with their school work and progress from grade to grade. It is reported that in a certain school 62% of the pupils who have been there for two years or more have eye deformities. We are told that throughout the city those eye troubles increase so consistently from year to year that it is almost possible to place a certain grade by reporting upon the percentage of eye deformity found among its members.

We are told that a very considerable percentage of the children have enlarged tonsils and adenoids, and that upon the removal of these enlarged growths, pupils who have been backward very frequently develop new life and vigor, so as to enable them to recover their places in the ranks with those of their own age.

Graduates of the high schools are often denied admission to the training schools because of defective vision or hearing, physical deformity, or some other disability, which would render them as teachers undesirable risks for the city to assume.

These disabilities — many of them — can be removed, and practically all of them could have been prevented. In this fact there is presented to the Board of Education a new set of problems.

With the magnificent work of the charitable organizations of New York City, we of the Department of Education are not only most heartily in sympathy, but to them we are willing to acknowledge a deep debt of gratitude for saving to the city and to us large numbers of children — children that have been taken in the summer to the country or to the seashore, those in immediate need who have been provided for, and the like. But this work, splendid as it is, does not remove the cause of the difficulty.

The city school is, comparatively speaking, a new thing. With it new problems of lighting and seating have arisen, as well as new problems in administration. The construction of the school building involves architectural and engineering skill, and the Committee on Buildings of the Board of Education has in its employ one of the best-known American architects, whose business it is to pass upon all technical questions concerning the construction of buildings for the public school system. The size of the timbers that will support the roof of a given span, the strength of the structure in relation to its height — these are technical questions for the solution of which is demanded the skill of the technical expert.

So the Committee on Supplies, which must furnish everything for the schools from textbooks to coal, has at its head a competent business man. Under the direction of the Committee on Supplies and with the help of an able force, he attends to the purchasing and distributing of the needed materials. The purchase of coal and other commodities is not a question of psychology and pedagogy; it is a question of technical business knowledge. From whom and where to buy, in what quantities, how and when to deliver, what kinds of coal to use, what system of auditing and accounting to employ — these are technical business questions, and they must be met by a technical business expert — just as the Committee on Buildings needs for its problems an expert architect.

It is my belief that the group of problems centering about the health of school children demands technical treatment of a similar nature as that required for the departments whose duties I have just sketched. If the children's eyes are becoming defective because of lack of wisdom in the choice of type, the length of line, width of margins, the spacing between lines, it is of fundamental importance that something be done to procure the proper textbooks and thus remove the cause of the eye deformity. But for this, the advice of the technical expert is needed. It is not a matter of untrained common sense — any more than the question of the stress and strain in a building is a matter of untrained common sense. If the present modes of sitting in the New York public schools are responsible to any degree for the crooked backs that we sometimes see in children, we should know it and then change the habits of sitting. This again is a matter for the trained orthopedic surgeon. It is not a question either of psychology or pedagogy — at least not until after the diagnosis and treatment have been decided upon.

How much home study shall children of a particular age be allowed or required to do? This also is not a question of psychology or pedagogy, it is a technical question of medicine. What lessons shall children study at home? This is a question of pedagogy and school administration; but the number of hours for study, or the time when a child may do his best work — these are biological problems. They are problems that are capable of more or less exact determination.

Such facts as these lead us to the belief that there should be co-ordinated with the other activities of the Board of Education a department composed of men who are technical experts on the various questions of health in relation to school life.

There are, I believe, 63,000 children in " part time " classes in New York City. No doubt, this condition has been due to some extent because of large immigration and other causes of a similar nature; but our experience within the last year has satisfied us that a very great percentage of these classes exists because of difficulties which are removable, and it is evident that if these difficulties had been prevented or removed, these children would have been advanced normally and thus there would be at present no " part time " classes in New York City. Purely as a matter of economy, then, it would pay to take

*Read before a Conference of the Committee on the Physical Welfare of School Children, in the Kings County Medical Society Building, New York City, on June 14, 1907.

those steps which will insure that each child, as far as possible, is in condition to take advantage of the education that is provided for it so liberally and generously by this city. It is economy that the child should progress regularly in his school life, rather than remain behind year after year, blocking the lower grades of the school.

There can be no choice between health and education. Only that education is effective for use in life which is founded upon and which secures good health.

Clinical Department.

ACUTE INFLAMMATION OF TENDON SHEATHS SEQUENTIAL TO ACUTE TONSILLITIS.

BY EDWARD A. TRACY, M.D.,
Orthopedic Surgeon to Mt. Sinai Hospital, Boston.

TONSILLITIS is known to immediately precede rheumatic fever frequently; indeed, some clinicians, Osler states, have gone so far as to say there is always a primary infective trouble in the lacunæ of the tonsils, to which the rheumatic fever is secondary, the latter arising from absorption of microbes or their products.[1]

Recent writers, among them John L. Morse, of Boston, have reported cases of acute nephritis sequential to acute tonsillitis. It may be that the tonsils are a port of entry for many diseases, such as rheumatism, influenza, acute nephritis and others less known. The following cases of acute inflammation of tendon sheaths were observed by me within a year, and are reported as of possible interest to the clinician interested in the sequences of acute tonsillitis. Acute tonsillitis is certainly a disease that merits careful attention and efficient treatment at the hands of the practician. The laity, in general, look upon tonsillitis as a simple trouble, not meriting a physician's care, unless the local symptoms are severe. This view is based on a lack of medical knowledge, and should be corrected. An analogous case of harmful ignorance on the part of the laity, that presents itself to mind, is their view-point of gonorrhea. Most patients with this disease are blissfully ignorant of its dangerous nature. We should teach them its possibilities — blindness, crippled joints, heart disease, sterility, peritonitis and even death. If this knowledge were general, surely it would be better for the laity — there would be less of the disease.

Report of cases of acute teno-synovitis sequential to acute tonsillitis:

CASE I. G. R., aged twenty-eight years, sent for me to see him because of a foot trouble. No history of trauma. A week before he had suffered from acute tonsillitis, recovering from the sore throat without medical advice. He was in bed, had moderate fever, and complained of his left foot being sore in region of the ankle joint. The ankle was painful when motion was attempted, and there was marked swelling and tenderness locally over the common sheath of the peroneal tendons. The sheath was evidently inflamed and had fluid in it — it standing out from the surrounding normal tissues as if anatomically injected. After a week of treatment, salicylates and local elastic pressure, the teno-synovitis disappeared.

CASE II. J. J. D., aged thirty-five years. Had acute tonsillitis of a week's duration, with only home treatment. A few days after subsidence of the throat trouble, he had an attack of acute trouble in both feet, in the lower Achillian regions. This lasted a little over a week. The tenderness was confined to the lower third of each tendon of Achilles, and the pain occurred when these tendons were put in motion. I saw him towards the close of the attack — advised painting over the affected parts with tincture of iodine (Churchill's formula) and absolute rest till soreness disappeared. Complete recovery after three days of treatment.

[1] Osler: Principles and Practice of Medicine, 1898.

Medical Progress.

PROGRESS IN PHYSIOLOGICAL CHEMISTRY.

BY J. BERGEN OGDEN, M.D., NEW YORK.

DIGESTION.

Gastric Secretion. — An extensive series of experiments by Bernt Lormquist[1] was conducted on the dog with the following operations: (1) Pawlow's small stomach; (2) a duodenal fistula; (3) a resection of the pylorus. An anastomosis between the large stomach and the duodenal fistula was obtained by means of rubber and glass tubes; this was temporary and could be removed when desired. The results obtained from experiments on this animal show that secretion in the stomach is produced by psychic and certain chemical stimuli. The latter may act on the mucosa of the stomach or on the intestine. Fats inhibit gastric secretion. The inhibition does not arise from the stomach but from the intestine. After a gastro-enterostomy, liquid substances containing much fat inhibit the gastric secretion more easily than in a normal animal. No difference is observed with other foods. In a stomach cut off from the intestine, special substances have specific actions. Water, alcohol and the ultimate products of the digestion of proteins and meat extracts provoke copious secretion. Hydrochloric acid 0.1–0.5% and natural gastric juice do not promote the flow. Lactic and butyric acids 0.5% give a marked secretion. With sodium chloride and sodium carbonate the effect is dependent on the concentration. The least active is physiological saline. With greater and less concentrations of the salt, the amount of juice is greater. Weak sodium carbonate 0.25–0.5% acts like water. With greater concentrations there is an increase. The maximum secretion is at the end of the first hour. Saliva and bile act like water. Bile precipitates pepsin and inhibits gastric digestion. The action of alcohol is most pronounced during the first thirty minutes. At this time both secretion and absorption are at their height. No other juice than gastric juice is produced. When certain substances such as sodium chloride and acids are applied locally, a profuse secretion of mucus takes place which

[1] Skand. Arch. Physiol., xviii, pp. 194-262 (1906).

combines with the hydrochloric acid and thus diminishes the acidity. In the duodenum, neither water nor sodium chloride acts on the gastric secretion. Fluid fats are very strongly inhibitory; to a less degree soda solutions. Digestion in the organism takes place more rapidly than in vitro. This is partly due to the peristaltic movement of the stomach, which mixes the food with the ferment solution, and partly to the removal of the products of digestion by resorption, which does not take place in vitro.

In "Gastric Contents" (tested by the Mett Tube Method) Sailer and Farr[2] have shown that there is an inhibition of proteolysis. The Schultz law holds only on dilution, and the diminution of the peptic activity observed with the undiluted contents is too great to be accounted for by the concentration of the enzyme. In 5 instances of the 23 examined the inhibition was overcome by a dilution of 1 to 4. In 2 cases the inhibition was complete, but digestive activity was manifested on dilution. Comparative experiments to determine the content of various substances affecting peptolysis were made in vitro with pepsin — HCl and natural gastric contents. Egg albumin, raw or coagulated, was without effect. Inhibition is absolute if the proteoses present amount to 5% by weight of the total; the effect is considerable at 2.5%, though not noticeable at 1%. Gelatin shows proteolysis at 2.5% and stops it when 10% is present. The inhibitory action of carbohydrates and fat is practically *nil*. With alcohol in a concentration of 32% there is no digestion; at 16% there is slight and below 8% no inhibition. With formaldehyde doubtful inhibition occurs in dilutions of 1 to 100 only. With higher dilutions there was no effect on the digestion. Benzoic acid (1%) and sodium benzoate (1%) are absolutely inhibitive, while in dilutions of 1 to 800 they noticeably retard digestion. Boric acid and sodium borate are without effect in any quantity. Salicylic acid is distinctly inhibitory even in small amounts. Sodium sulphite in concentrations of 1 to 1,600 slows and at 1 to 100 prevents proteolysis. Potassium nitrate inhibits at 1 to 400. The gastric antiseptic, resorcinol, is without influence in dilutions higher than 1 to 100; guaiacol carbonate is practically without effect, while creosote strongly inhibits proteolysis. The major portions of test meals were withdrawn, and the remainders diluted greatly in the stomach and immediately removed. On testing, there was a relatively greater digestive action by the gastric contents diluted in the stomach than by the correspondingly diluted (in vitro) first portion. By giving three cases of achylia gastrica and one of gastric carcinoma 200 to 500 cc. of $\frac{N}{20}$, HCl, considerable proteolytic activity was demonstrated in the contents removed fifteen minutes later.

Proteid and Carbohydrate Digestion in the Gastro-Intestinal Tract. — The investigations of London and Polowzowa[3] show that the stomach of a dog with a pyloric fistula empties itself within four to five hours. The maximum emptying takes place in the first two hours. Stomach digestion has about the same intensity during the entire digestion period. Proteid digestion in the stomach is more than twice as great as the carbohydrate digestion ($\frac{2}{3}$ to $\frac{1}{3}$). Even in the first hour of digestion proteids are split to peptones and carbohydrates to sugar. The quantity of substances passed out from the stomach as time goes on forms an ascending series of numbers while the quantity of substances digesting in the stomach forms a descending series. As a rule, carbohydrates of food are passed from the stomach more rapidly than the proteid, showing the power of selection on the part of the stomach. No absorption of proteid or carbohydrate takes place from the stomach. The quantity of gastric juice secreted is in a measure proportional to the food introduced. In the duodenum (studied by means of duodenal fistula) about $\frac{1}{3}$ to $\frac{2}{3}$ of the total digestion takes place. The activity of digestion is in a great measure directed toward the carbohydrate of the food ($\frac{1}{2}$ to $\frac{3}{4}$) while the proteid digestion is smaller. About $\frac{1}{4}$ of the absorption takes place in the duodenum in which twice as much carbohydrate as proteid is absorbed. The absorption intensity calculated upon one square centimeter per hour of duodenal mucous membrane is, for the dry substance, 19.36 mgm., for nitrogen 0.6 mgm., for nitrogenous substances 3.75 mgm., and for sugar 19.21 mgm. The intensity of absorption calculated for square centimeter per hour, for dry substances, is 54.44 mgm., for nitrogen 0.70 mgm., for nitrogenous substances 4.38 mgm., and for carbohydrate 51.57 mgm. The degree of digestion in the jejunum is about 10%, of which 16% is to be ascribed to proteid digestion and 4% to carbohydrate digestion. The degree of absorption in the jejunum amounts to about $\frac{1}{8}$ to $\frac{1}{3}$ of proteid and $\frac{1}{4}$ of carbohydrate. The dry substance dissolved in the fluids fed is absorbed in concentrations of 10%, proteid in concentrations of 1.7%, and sugar in concentrations of 4.6%. The absorption intensity of the jejunum calculated for dry substance is 10.18 mgm., for proteid 2.39 mgm., for carbohydrate 9.0 mgm., square centimeter per hour. The intensity of digestion per square centimeter per hour for dry substance is 3.54 mgm., for proteid 0.67 mgm. and for carbohydrate 3.41 mgm. About $\frac{1}{12}$ of the food is digested in the upper part of the ileum, and carbohydrate and proteid are digested about equally. Absorption takes place to the extent of about $\frac{1}{3}$, proteid and carbohydrate being absorbed equally. In the lower ileum only carbohydrate digestion takes place, the proteid digestion being completed in the upper ileum. In the upper ileum the proteids are absorbed in concentration of 1.3%, carbohydrates in concentrations of 4.0%. The intensity of absorption in the upper ileum per square centimeter per hour is, for dry substance, 9.0 mgm., for proteid 0.9 mgm. and for carbohydrate 8.4 mgm. The intensity of digestion is, for dry substance, 2.1 mgm., per square centimeter per hour, for proteids 0.31 mgm., for carbohydrates 1.9 mgm. The absorption in the lower ileum is about $\frac{1}{4}$, — for

[2] Am. Jour. Med. Sce., cxxxiii, pp. 113-126.
[3] Zeitschr. Physiol. Chem., xlix, pp. 328-396.

proteids ¾, for carbohydrates ¼. In the vicinity of the ileocecal valve, proteids are absorbed in the concentration of 3.0%, carbohydrate in concentration of 0.8%. The absorption intensity in the lower ileum for dry substance is 3.6 mgm., per square centimeter per hour, for proteids 0.57 mgm., for carbohydrates 3.26 mgm. The intensity of digestion in the lower ileum for proteids is practically *nil*, for carbohydrates it is 0.33 mgm., per square centimeter per hour.

Digestion of Fat. — From feeding experiment with dogs with stomach, pylorus, duodenum, jejunum and ileum fistulæ, Levitas[4] concludes that the digestion of fat consists of two chemical processes — cleavage of fat into fatty acids and glycerol, and the formation of fatty acid salts. Neither of these processes reaches its end point. At every point in the digestive tract there is practically equilibrium between neutral fat and fatty acids, or neutral fat, fatty acids and fatty acid salts. In the stomach fat undergoes only a very small chemical change so long as no fluid from the duodenum finds its way into the stomach. In the stomach there is no absorption. In the upper parts of the intestine the absorption of fat either as such or in the form of free fatty acid is first observed. Between lipolysis and fat absorption there exists a certain parallelism. The farther the saponification has gone the greater the absorption. Fat without admixture of other substances is well utilized by the organism, even to the extent of 96% (butter and beef fat). Lard is more poorly utilized, probably on account of its laxative action.

ACTIVATION OF TRYPTIC FERMENT.

Wohlgemuth's experiments[5] show that pancreatic juice collected from man through a fistula does not contain an active trypsin, only a proferment being present. This proferment may be activated by liver press juice, by glycocol, alanine, leucine, and slightly by tyrosine but not by glutamic or aspartic acids. Bile added to activated proferment causes an increased tryptic activity.

EREPSIN IN THE PANCREAS.

Contrary to Vernon's observations, Mays[6] finds that if trypsin destroys erepsin the action is not a very rapid one since the extracts of pancreas (cattle) on the eighth day still contained an active erepsin. Further experiments prove that extracts, one month or one year old, still possess active erepsin and also trypsin. Ammonium sulphate precipitates erepsin, for such precipitates when prepared from active ereptic pancreatic extracts are active upon peptone. The question as to whether the pancreas contains two enzymes, trypsin and erepsin, or whether one enzyme is responsible for both activities was not decided. An attempt was made to decide the question with the pancreas of the cat which is reported to contain no trypsin. This was not confirmed by Mays. Some glands and extracts possess strong ereptic power and weak tryptic action while others show the reverse, and in still others there appears to be a sort of parallelism between the two. Treatment of the glands or extracts with alcohol and ether appears to weaken both activities.

In working with fresh pancreatic juice of the dog, the same author[7] found that when the pancreatic juice of the dog is obtained from a temporary fistula it is very weakly proteolytic immediately. A pancreatic juice which would dissolve fibrin but not egg albumin (coagulated) described by Bayliss and Starling, could not be obtained by the author, for if the juice acted upon fibrin it also dissolved coagulated egg albumin slowly. Allowing the fresh juice to stand causes spontaneous formation of trypsin from the trypsinogen. It is suggested that there may be several precursers for trypsin, one which is activated by enterokinase; the others by other agents. The fresh pancreatic juice of the dog, whether activated, by intestinal extract or unactivated does not possess a very active ereptic power.

ABSORPTION OF TRYPSIN BY CASEIN.

As found by Hedin,[8] casein extracts trypsin which has been absorbed by charcoal, but it requires some time to accomplish it. The end of the extraction can be recognized by the fact that specimens filtered after different intervals of time contain the same amount of trypsin. The higher the temperature the greater the absorption, and the larger the amount of casein the greater the amount of trypsin extracted. The results support the view that protein combines with trypsin before they are broken up by the same.

Experimental work by the same author[9] indicates that the amount of trypsin neutralized by antitrypsin is independent of the dilution. The anti-body can be completely saturated by using a sufficient amount of trypsin; on the other hand, it was found impossible under the conditions employed to completely neutralize trypsin by an excess of anti-body. The amount of trypsin neutralized by a certain amount of anti-body is not constant, a small amount of anti-body neutralizing relatively more trypsin than a larger. The anti-body can be completely destroyed by 0.1% to 0.2% of acetic acid at 37° C. for about eight hours. When trypsin has been neutralized by the anti-body, it has been found impossible by the means tried to render it active again.

LIPASE.

Lipase of Intestinal Juice. — From dogs with a Thiry-Vella fistula, Boldyneff[10] has been able to obtain intestinal juice which possessed lipolytic action. This lipase is not so active as that of pancreatic juice and acts much better with emulsions of fat than upon non-emulsified fat. With milk the action is very energetic. Bile, which

[4] Zeitschr. Physiol. Chem., xlix, pp. 273-285.
[5] Biochem. Zeitschr., ii, pp. 264-270.
[6] Zeitschr. Physiol. Chem., xlix, pp. 124-187.
[7] Zeitschr. Physiol. Chem., xlix, pp. 188-201.
[8] Biochem. Jour, ii, pp. 81-88.
[9] *Ibid.*, i, pp. 475-484.
[10] Zeitschr. Physiol. Chir., l, pp. 394-413.

favors pancreatic fat cleavage, has no beneficial effect upon that of intestinal lipase. Addition of antiseptics does not markedly reduce the activity. The intestinal juice increases the fat-splitting power of pancreatic juice, and this is probably to be ascribed to intestinal lipase. After boiling the intestinal juice this action ceases. The intestinal juice obtained from the lower portions of the small intestine has no lipolytic activity.

The Inhibiting Effect of Sodium Fluoride on the Action of Lipase. — Loevenhart and Pierce [11] have found by experiment that very small amounts of sodium fluoride accelerate the hydrolysis of the fats and lower esters by the extracts. The inhibiting action of the fluoride increases as the tubes become more acid. This is probably due to the production of hydrofluoric acid. Sodium fluoride does not influence materially if at all the hydrolysis of esters by alkalies, and it only affects the hydrolysis of esters by acids as the sodium salt of any weak acid should. From this it is concluded that the fluoride probably does not inhibit the enzymic hydrolysis of the esters by reacting, with the latter. The inhibiting action of the fluoride cannot be attributed to the precipitation of calcium. The other halides of sodium and potassium, as well as many other substances investigated, do not possess an action comparable in extent to that of the fluoride. Hydrofluoric acid, and in all probability all soluble fluorides, affect these processes similarly to sodium fluoride. The greater the amount of enzyme acting the less will be the inhibiting effect of given concentration of sodium fluoride. This proves that there exists a quantitative relation between the enzyme and the fluoride. Sodium fluoride does not destroy the enzyme. Of the two modes of action to be considered, (1) that the fluoride reacts with the enzyme, (2) that it reacts with an intermediate product formed in the action of the enzyme on the ester and resulting in an increase in the stability of the intermediate compounds, the authors favor the latter view, because the enzyme is not destroyed by the fluoride, and furthermore because the inhibition varies much with different esters. It is suggested that the term " zymolyte " be applied to the substance upon which an enzyme acts instead of the term " substrate."

A so-called Coferment of Lipase. — The observation of Magnus that there exists a coferment for the action of liver extract on amyl salicylate is confirmed by Loevenhart.[12] This coferment was found to be the bile salts. When ethyl butyrate is used instead of amyl salicylate no coferment is to be noted by this method and the bile salts do not accelerate this reaction. Therefore it is not right to apply the term coferment to the bile salts with reference to lipase in general. It must be stated that they have only been proven to act as such in the hydrolysis of amyl salicylate by liver extract.

[11] Jour. Biol. Chem., ii, 397-413.
[12] *Ibid.*, ii, pp. 391-396.

CARBOHYDRATES IN THE BLOOD AND URINE.

Heptose in Human Urine. — Rosenberger [13] reports a case in which he was able to extract from the urine by means of methyl or ethyl alcohol three bodies precipitable by ether. The first was optically inactive, the second possessed dextrorotation, and the third, which at first was weakly levorotatory, became inactive. All three substances were reducing bodies and the dextrorotatory substance formed an osazone. The osazone had a melting point of 203° to 204° and an elementary composition similar to that of heptosazone.

Detection of Levulose in the Urine. — Attention is called by Jolles [14] to cases in which the polarization of samples of urine containing secreted fruit sugar is either very low or to the left and consequently the gravimetric and polarimetric methods may give very different results upon the same sample of urine. It is also pointed out that a number of other substances such as B-oxybutyric acid, glycuronic acid and many medicines which give products that are secreted through the urine may interfere seriously with the determination of the sugar by the polarimetric method. In addition, cases are reported in which fructose and glucose occur simultaneously in the urine. In view of these observations, the following methods are proposed. A modification of Selivanoff's test is suggested for the qualitative detection of the fructose. Ten cubic centimeters of urine are heated to boiling with a pinch of resorcinol and about 3 cubic centimeters of 10% hydrochloric acid. A red color indicates fructose. This test is applied in connection with the polarimetric and fermentation test, in which case its indication may be of some weight. The volumetric quantitative method for fructose is shown to be of little value, and the author therefore adopts the gravimetric method first proposed by Ost. The copper solution is made by gradually dissolving in water 17.5 gm. $CuSO_4.5\,H_2O$ to 250 gm. K_2CO_3 + 100 gm. $KHCO_3$, and the solution diluted to one liter. One hundred cubic centimeters of the copper solution + 50 cc. of the sugar-containing urine are quickly heated to boiling and kept so for ten minutes. The solution is rapidly cooled and filtered with suction through an asbestos filter. The precipitate is washed with hot water and finally with alcohol, dried, heated and reduced in hydrogen. The best results are obtained with urine of which 50 cc. reduces about 400 mgm. copper. A number of results are given, and also an algebraic expression worked out for use in calculating the polarimetric and gravimetric determinations obtained upon samples of urine containing both fructose and glucose.

A New Test for Sugar. — Fenton [15] points out that all carbohydrates of the hexose or polyhexose type yield brommethylfurfural when treated with hydrobromic acid in an appropriate condition. The furfural compound reacts with malonic ester to give a compound yielding a solu-

[13] Zeitschr. Physiol. Chem., xlix, pp. 202-209.
[14] Arch. Pharm., ccxliv, pp. 542-549.
[15] Lancet, 1907, pp. 172-215.

tion with a powerful blue fluorescence in the presence of alkali. The test is best applied to solids but may be done with liquids containing hexose in the following way: Four to 5 cc. of the liquid are poured on sufficient anhydrous calcium chloride to form a pasty mass. To the mass is added 10 cc. of toluene containing 5 drops of phosphorus tribromide. The mixture is boiled. The toluene solution is poured off, and a little malonic ester and alcohol added. The mixture is neutralized by adding alcoholic potassium hydroxide. A pink color appears. On dilution with alcohol and the addition of water, the solution exhibits a blue fluorescence. The test may be used to distinguish hexoses from pentoses.

Another Method for Sugar Determination. — Bang [16] gives a titrimetric method in which the results are as accurate as the ordinary gravimetric method; it is as follows: With a differential pipette 10 cc. of the sugar solution are measured into a flask of about 200 cc. capacity. To this 50 cc. of the copper solution are added and the total fluid boiled for three minutes. The mixture is quickly cooled and titrated with a standard hydroxylamine solution until colorless. The copper solution contains 12.5 gm. copper sulphate, purified according to Soxhlet, 250 gm. of potassium carbonate, 200 gm. potassium sulphocyanide, 50 gm. acid potassium carbonate made up to a liter with water. The hydroxylamine solution contains 6.55 gm. hydroxylamine sulphate and 200 gm. potassium sulphocyanide made up to 2 liters with water. A table is appended giving the number of milligrams of sugar for the number of cubic centimeters of hydroxylamine employed. The whole determination can be made within ten minutes.

Improved Method for the Determination of Sugar in the Blood and other Tissues. — As a result of the experimental work of Edie and Spence [17] give the following method: The blood previously collected aseptically in a sterile vessel, is defibrinated aseptically, then 50 cc. drawn off and introduced into a dialyzing tube contained in a wide-mouthed bottle of about 500 cc. capacity provided with a tightly fitting glass stopper. The dialysis is carried out in 300 to 450 cc. 0.9% sodium chloride solution, which is accurately measured, in an ice chamber. Equilibrium is reached in from forty to forty-five hours. At the end of this time the volume of the saline outside the dialysis tube is accurately measured, the bottle and dialyzing tube being then rinsed with water. The saline and washings are brought to the boiling point when an excess of boiling Fehling's solution is added and the whole kept gently boiling for five minutes. The cuprous oxide is filtered on a tarred Gooch crucible, ignited, and the reduction determined by the weight of cupric oxide thus obtained. By this method of estimating the sugar in the blood some insight has been gained as to the condition of that sugar. There is evidence to show that part of it exists as free sugar, another part as combined sugar, by this being understood those combinations of glucose with protein or lecithin, and a third part as polysaccharide or hydrolyzable sugar.

[16] Biochem. Zeitschr., ii, pp. 271-290.
[17] Biochem. Jour., ii, pp. 103-111.

THE EFFECT OF ALCOHOL ON SOME OF THE SECRETIONS OF THE BODY.

Gastric secretion. — The experiments of Kast [18] show on pseudo-feeding of dogs and with dogs with a small accessory stomach that ethyl alcohol in small quantities and in dilutions under 10% stimulates gastric secretion. The stimulation leads to increased hydrochloric acid formation and secretion but not to a new formation of pepsin. An increased mucous production with alcohol of this strength could not be observed in man or in the dog. Concentrations of ethyl alcohol of 20% cause even a more intense gastric secretion together with an increased mucus production. With higher concentrations the secretion time is decreased and the mucus elimination increased. Alcohol over 50% strength causes intense mucus production, and a short and relatively small hydrochloric acid secretion. Alcohol over 70% leads to irritation of the mucous membrane by precipitation of the proteids. Amyl, propyl and butyl alcohols interfere with gastric digestion by inhibiting or retarding peptonization of the proteids and by irritating the mucous membrane leading to catarrh of the stomach.

Bile. — Salant [19] found that intravenous injection of alcohol into dogs does not materially change the rate of secretion of bile, and as a result does not have appreciable action on the biliary function of the hepatic cell. Alcohol injected intravenously has no influence on the content of solid constituents of the bile. When alcohol is injected into the stomach or intestines there is a marked increase in the flow of bile, and the solid elements are increased absolutely and relatively. On the biliary solids the organic constituents were increased somewhat more than the inorganic.

Hydrolytic Enzymes. — An investigation by B. Schöndorff [20] on the effect of alcohol on the content of glycogen in liver and muscle after being treated with this reagent shows that glycogen does not disappear in the liver which has been kept under alcohol. Similar results were obtained with muscle. In preserving organs for analysis under alcohol, it is better to rub them up with cooled alcohol. The diastatic ferment in the liver is not destroyed by alcohol; by removing the latter it recovers its activity. Cooling the organs to 21° C. does not destroy the activity of the ferment. In the muscles of the dog and the ox the glycogen disappears with great rapidity at room temperature. Ox muscle lost 32.7% and dog muscle 16.9% in one hour and twenty-five minutes.

Urine. — As a result of the experimental work of Hinkel and Salent,[21] they conclude that the administration of alcohol to dogs on a standard

[18] Arch. Verdauungskrankh., xii, pp. 487-507.
[19] Am. Jour. Physiol., xvii, pp. 408-429.
[20] Arch. Gesell. Physiol. (Pflüger's), cxvi, pp. 495-517.
[21] Proc. Sc. Exp. Biol. Med., Feb., 1907.

diet causes only slight variation in the nitrogen output. The total sulphur is diminished, and the neutral sulphur increased. The ethereal sulphates are diminished, as are the phosphates. The chlorides are also somewhat diminished.

Reports of Societies.

NEW YORK PSYCHIATRICAL SOCIETY.

Stated Meeting, May 1, 1907.

The President, Dr. Adolf Meyer, in the chair.

RECOMMENDATIONS CONCERNING THE IMPROVEMENT OF MEDICO-LEGAL METHODS.

Dr. Pearce Bailey, of New York City, read this paper. It was not difficult to point out glaring defects in our Code of Criminal Procedure, judged by the standards of modern psychiatry, but legal, judicial and even medical obstacles stood in the way of remedying these defects. Any change from existing conditions would be possible only after a severe and prolonged contest by concerted forces. The fundamental error in procedure n criminal lunacy cases was the test of responsibility, *i. e.*, the knowledge of right and wrong as to the act at the time of its commission. This had been condemned by medical writers as being no test at all. Should the letter of the law be strictly observed, no lunatic could, under it, escape the full punishment for his offense, unless it could be shown that, at the time of the commission of the act, he suffered from distinct clouding of consciousness. Under this law, nevertheless, many murderers had been acquitted by reason of insanity. A loophole had been left in certain states — not New York — by adding the "uncontrollable impulse" clause. When this clause did not exist the fate of the prisoner depended upon the construction which the jury saw fit to place on the knowledge of right and wrong, as mentioned in the law. The question would naturally arise why, if so unsatisfactory, this test had stood so long with so little variation. The reasons were evident. Defective as is the knowledge of right and wrong as a test of responsibility, no better substitute had ever been offered. Another reason why this law had stood might be found in the fact that the matter is always in the hands of laymen, to whom the science of psychiatry is practically unknown. This test would have to endure so long as the Code of Criminal Procedure remained what it is to-day, for the reason that this test is as good as any single test of insanity could be. Modern psychiatry demanded that this test be, not replaced by another, but be done away with altogether. No criminal precedure could be at harmony with modern views of mental disease as long as there was no middle course between responsibility and irresponsibility, and no means of judging between them except those furnished by the knowledge of right and wrong. Nothing had been more plainly taught by recent advances in psychiatry than that different mental states make different degrees of responsibility. No law which failed to take cognizance of this fact could be satisfactory to alienists. Before undertaking any legislation in the line of amending the Code of Criminal Procedure, the Society should bend its energies toward the passage of a law which emanated from the Society and which was in the hands of the Committee at Albany. This law, if passed, would do away with many of the present evils of court procedure. It was suggested that the model plan for procedure in criminal cases would be that the question of lunacy be referred by the court to a committee of three, two members at least of which should be medical men. These men should have been certified as to their moral character and should have passed an examination as to their qualifications to pronounce on the mental conditions. There should be several such experts appointed in every judicial district. The commission thus appointed should examine into the mental state of the prisoner and report to the court. They should determine the degree of responsibility, that is, they should determine the character of the mental disease, if any, from which the defendant was suffering, and report in accordance therewith that he was fully responsible, partially responsible or irresponsible. Partial responsibility in capital cases should be sufficient to remit the death sentence, but no one who had committed murder and who was acquitted on the ground of partial responsibility should be restored to liberty under ten years. In other felonies the cases of partial responsibility should have the shorter sentence optional with the judge. The report of the committee should be handed to the court and become part of the evidence and should be the only medical expert evidence.

Dr. William Hirsch, of New York City, was of the opinion that no law, however good, would remedy the present condition of affairs, so long as we have not to deal with honest men. If it be possible for corruption or any kind of dishonesty to enter legal procedures, then the best law could not be carried out in an ideal way. On the other hand, laws, no matter how defective, could be so handled that they would answer the purposes of humanity and truth, if we have to deal with honest men. This society should direct its attention to its own profession and endeaver to raise the standard of expert testimony to such a point that dishonesty and incapacity would not be brought to bear in criminal procedures.

Dr. William Mabon, of New York City, thought the present law unsatisfactory, but so many questions were involved that it would be difficult to formulate anything that would improve conditions as they exist. He advocated referring the matter to a committee who should investigate conditions not only in this country but abroad. Nothing could be accomplished until the legal profession could be brought into closer touch with the medical profession.

Dr. A. R. Dieffendorf, of Middletown, Conn., asked Dr. Bailey to state, in closing the discussion, just what standards physicians would have for determining the degree of responsibility. He believed that neither the legal profession nor the community would permit a commission of alienists to pass upon that matter without knowing the rules which the physicians applied. He asked further if Dr. Bailey, in looking up the matter, had been able to determine how the criminal procedure in Great Britain had brought about the remarkable condition to which he referred, viz.: that there were just as many men found not guilty of first degree murder on account of insanity as were found guilty and hung.

Dr. L. Pierce Clark, of New York City, was heartily in accord with the suggestions made by Dr. Bailey and favored the appointment of a committee to study the matter very thoroughly. The law in the main was far better than what is in force at the present time, but a proper statute could be worked out only after careful study from a legal as well as from a medical viewpoint.

Dr. William L. Russell, of Poughkeepsie, N. Y., was, on the whole, in accord with the suggestions presented in the paper, and believed that a committee might, by prolonged study and the presentation of preliminary reports, bring out a discussion of the whole matter that would be very helpful. He referred to the

committee appointed two or three years ago by the American Medico-Psychological Association to confer with the American Bar Association, and thought it would be well for the committee under consideration to confer with this and other similar committees. A special procedure might be instituted to determine the advisability of detaining those who have committed murder or homicide and who have been acquitted on the ground of partial responsibility.

DR. AUGUST HOCH, of White Plains, N. Y., said it was not so much a question of making, or urging the making, of a different law in regard to the matter of responsibility, as it was of urging that a better basis be furnished for forming a medical opinion. In most cases experts would not differ so much about a given case if all had the same facts and enough facts. The divergence of opinion arose because, in many instances, the experts were working with an utterly insufficient knowledge of the case; so insufficient, very often, that in everyday practice no conscientious psychiatrist would think of forming an opinion upon it.

DR. ALLAN M. LANE HAMILTON, of New York City, thought there should be some *rapprochement* between the medical and legal professions, and to this end suggested that a committee be appointed to confer with the Appellate Division of the Supreme Court, with reference to the question in hand. Dr. Bailey had been misinformed concerning English laws. In the question of murder the facts were left to the jury, which inquired into the matter, the question of insanity coming up later. Expert witnesses were not objected to, but the final decision was left to some representative of the Crown. He agreed with Dr. Bailey concerning the ten years' confinement of individuals acquitted of murder on the ground of partial responsibility. In disputed cases, however, the time of confinement need not necessarily be ten years.

DR. CHARLES L. DANA, of New York City, did not take quite so pessimistic a view of the matter as did Dr. MacDonald. The committee, if appointed, should confer with prominent judges and lawyers, particularly criminal lawyers. The question of partial responsibility was an important one and if all alienists would accept the idea that there is such a thing as partial responsibility it would have its effect upon the method of procedure. It would be useful for the committee to undertake work along the line of devising a test for insanity which might be accepted by the legal profession.

DR. ADOLF MEYER, of New York City, said that in practically all European countries partial responsibility had been recognized in some form. The question was whether this could be so formulated as to be satisfactory to the community, for, after all, our laws were not absolutely bad. There had been heretofore too much expression of mere opinion on the part of alienists, without enough attention paid to the determination of the actual facts. The relative looseness in the determination of facts and the too liberal acceptation of hypothetical questions on the part of physicians had led to the unfavorable impressions existing to-day. It was extremely difficult to form an idea as to what should be considered sufficient facts to justify an expert in giving an opinion. Adequate observation of the persons should be in some manner invited, if not enforced, and alienists should raise among themselves the standard as to what facts are necessary to justify an opinion. It was the work of the physician to determine whether the individual had any mental disorder, and whether this disorder had anything to do with the commission of the act. The question of responsibility should be decided by the physician.

DR. PEARCE BAILEY, of New York City, in closing the discussion, said the question of responsibility should be referred to medical men, but they would have no authority more than communicating their findings to the jury. While it might be impossible to change the present procedure, yet it was well enough to look into the matter to see what could be done.

Book Reviews.

Atlas and Textbook of Human Anatomy. By DR. JOHANNES SOBOTTA, Professor of Anatomy in the University of Würzburg. Edited, with additions, by J. PLAYFAIR MCMURRICH, A.M., PH.D., Professor of Anatomy in the University of Michigan. Vols. I and II. Illustrated. Philadelphia and London: W. B. Saunders Company. 1906.

It is not to be questioned that anatomical teaching has been greatly furthered during the past few years by improved illustrating and by the use of the atlas form of presentation. We are glad to notice another admirable book of this type by Dr. Sobotta, of Würzburg, edited, with additions, by Dr. Playfair McMurrich, of the University of Michigan. It has been the aim of the author to meet the needs both of the student and the physician in the production of his work, a distinction which we are inclined to think is at times too much insisted upon. It is not an atlas designed for the special student, and therefore is not to be compared with Toldt, which is much more comprehensive. A special feature of this book is the use of several colors in the plates. Particularly has this method been used in the treatment of the muscular system with results which are altogether to be commended. The illustrations in general are wonderful reproductions of the actual dissections, and give one a peculiarly good idea of the special relations of the parts.

The first volume is especially designed for use in dissection, and the illustrations have been arranged with this end in view. It takes up the subject of bones, ligaments, joints and muscles. The second volume is concerned with splanchnology, including the heart. The general method followed is the same as in the first volume. The illustrations which naturally constitute the essential portion of such a work as this are beyond criticism and cannot fail to be of the utmost value to any student of the subject who has not immediate access to the actual dissections. The book will doubtless take its place among the very best of the atlases dealing with human anatomy, certainly so far as the illustrations are concerned. The text is somewhat brief and descriptive essentially of the plates. Its conciseness is its virtue. We see no evidence that a third volume is to appear and miss any section on the central or peripheral nervous system. This is an unfortunate omission. The book in general is an admirable example of the extraordinary perfection which modern publishing has attained.

Obstetrics for Nurses. By JOSEPH B. DELEE, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, Obstetician to Mercy, Wesley, Provident, Cook County, and Chicago Lying-in Hospitals, Lecturer in Nurses' Training School of same. Second edition, thoroughly revised and enlarged, 510 pages. Philadelphia and London: W. B. Saunders Co. 1906.

This book is just what its name indicates and as a specimen of book-work is most pleasing. It tells the nurse what to do to aid the obstetrician, and also what to do if she is alone. The instruction for the preparation of the patient and also of the lying-in room is excellent. The dietary and the glossary are valuable features.

A Text-Book of Obstetrics. By BARTON COOK HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania, Gynecologist to the Howard, the Orthopedic and the Philadelphia hospitals. Fifth edition, revised and enlarged, with 767 illustrations, 40 in colors, 915 pages, octavo. Philadelphia and London: W. B. Saunders Co. 1906.

This popular book, which first appeared in November, 1898, has already reached its fifth edition, which is much enlarged and is thoroughly up to date. It is a very safe guide for the practitioner, since only those procedures which have clinical proof back of them are advised. Special attention is given to puerperal infection, and the treatment of this important subject is excellent. The subject of pyelitis of pregnancy does not have the consideration its importance demands, and so far as it is discussed the statements are not according to the weight of evidence. The book will no doubt keep its high rank among the standard text-books.

Modern Clinical Medicine — Diseases of the Digestive System. Edited by FRANK BILLINGS, M.D. An authorized translation from "Die Deutsche Klinik," under the general editorial supervision of Julius L. Salinger, M.D. With 45 illustrations. New York and London: D. Appleton & Co. 1906.

This volume includes selected articles from many of the most eminent medical men of Europe. The diseases of the digestive tract are treated fully and at the same time in a concise, practical manner. The most modern methods of diagnosis are discussed and the treatment of the various disorders receives careful consideration.

It is a book of value to the surgeon as well as to the physician, since many of the diseases included lie on the border land of medicine and surgery.

Diagnostics of Diseases of Children. By LE GRAND KERR, M.D., Professor of Diseases of Children at the Brooklyn Postgraduate Medical School. Octavo. Pp. 542. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

The author in his preface calls attention to the facts that in infancy and early childhood diagnosis has to be based largely on the objective symptoms and that consequently their correct interpretation is of the greatest importance. The book is devoted to the diagnosis of disease in early life on these symptoms, and etiology, pathology and subjective symptomatology are touched on only incidentally. While there are many minor points which might be criticised and occasional omissions, the subject is on the whole very satisfactorily treated, and the book cannot fail to be most useful, both to the student and to the practitioner.

Atlas and Epitome of Diseases of Children. By DR. R. HECKER and DR. J. TRUMPP, of Munich. Edited, with additions, by ISAAC A. ABT, M.D., Assistant Professor of the Diseases of Children in Rush Medical College, in affiliation with the University of Chicago. With 48 colored plates, 147 black and white illustrations. Pp. 453. Philadelphia and London: W. B. Saunders Company. 1907.

When there are so many good books on pediatrics by American authors, it hardly seems necessary to translate those in other languages. If this seems advisable, however, it would seem wiser to select first-class books instead of second- or third-rate ones like this. We see nothing in this work to make it preferable to the compends by American authors, which, like all compends, are in themselves objectionable. The only thing we see in this book to commend are the colored plates, which are unusually numerous and some of which are very good.

Stöhr's Histology Arranged upon an Embryological Basis. By DR. FREDERIC T. LEWIS. 8vo, ix + 434 pp. 450 figures. Philadelphia: P. Blakiston's Son & Co. 1906.

Most authors of histologies have been contented to deal with their subjects from the standpoint of descriptive anatomy, and the facts of histogenesis have found places in their volumes only as footnotes or incidental paragraphs. Lewis's edition of Stöhr presents the novel feature of an histology built on embryological outlines. The rearrangement of this well-known text-book necessitated by such a departure has been no slight undertaking. The first part of the book, which covers the great majority of its pages, deals with cytology, general histology and special histology. The section on cytology, though largely rewritten, presents the same fundamental facts on the structure and function of cells that have been given in previous editions. The second section, that on general histology, deals with tissues not in the older, purely descriptive way, but from the genetic standpoint. The development of the mammalian body from the fertilized egg cell is briefly sketched and the differentiation of the germ layers is outlined. This affords an embryological basis for a consideration of the fundamen-

tal tissues; epithelium, mesenchyma, muscular, nervous and vascular tissue. The third section, on special histology, takes up the minute structure of the various organs of the human body somewhat as in the former editions, though here, as in previous sections, much new matter on histogenesis and even organogenesis is introduced. To hold the volume to what was approximately its former size, the general directions for making histological preparations, as well as the more detailed statements as to the preparation of the specimens from which the illustrations were taken, have been omitted or condensed into a few pages constituting the second part. Thus room has been made for the very considerable body of newly introduced embryological matter.

An examination of the volume shows it to be accurately and consistently put together, and its unusual freedom from typographical errors and misstatements reflects great credit on both author and publisher. The press is doubtless responsible for the partial loss of " side " in the explanation of Figure 26 and the faintness of Figure 138. Something might have been gained by treating the cerebral nerves (page 95) from the modern standpoint of nerve components rather than by dealing with them as composed of dorsal, lateral and ventral roots; and a description of the histogenesis of ciliated epithelium (page 31) might well have been added. But aside from a few small blemishes the volume is avowedly of very high excellence and should find ready acceptance wherever modern histology is to be studied and taught. It must not be forgotten, however, that an embryological treatment of tissues is only one step from the older descriptive standpoint toward a broad and comprehensive view of the subject, and that it is as important for the student to know the physiology of tissues as it is to be acquainted with their structure and origin. It is to be hoped that this departure in histology will be followed by further progress, in which, in addition to the structure and genesis of tissues, their physiology will receive consideration.

Epilepsy: a Study of the Idiopathic Disease. By WILLIAM ALDREN TURNER, M.D., Edin. 8vo. Pp. xiv, 272. With 13 charts and 6 illustrations. London: Macmillan & Co. 1907.

We have several times had occasion to notice in the columns of this JOURNAL the various studies on epilepsy which Dr. Turner has published in the English journals. These studies have been embodied in the volume before us, which is based upon the careful study of a thousand cases observed at the colony for epileptics at Chalfont-St. Peter, and at the National Hospital for the Paralyzed and Epileptic in Queen Square, London. The chapter on pathology is written by Dr. John Turner, from a study of one hundred and fifteen autopsies. A careful study of the literature, combined with this large personal experience, gives the stamp of authority to the work. The title is not wholly accurate, for the author follows the usual custom of including the convulsive attacks of cerebral infantile paralysis and organic disease of the brain under idiopathic epilepsy. He regards epilepsy as an organic disease of the brain, whose dominant cause is ancestral epilepsy — a disease indicative of family neuropathic degeneration. A neuropathic heredity was found in 51% and a similar heredity in 37.2%. Like most writers on the question of heredity in nervous diseases, Turner is content with noting the percentage of nervous disease in the heredity, without considering the nature of the disease or comparing the percentage with the percentage of nervous heredity in healthy persons. Thomann-Koller and Diem have found such nervous heredity in from 59% to 66.9% of healthy persons, so that the conclusions which Turner and others draw from their statistics is far from convincing as to the hereditary nature of epilepsy. He has also disregarded the teachings of Weismann as to injury of the germ plasma, which have, we believe, a very important bearing upon the genesis of epilepsy. The characteristic symptom of epilepsy, according to Turner, is the periodical recurrence of attacks of loss or impairment of consciousness, sometimes accompanied by convulsions. The convulsions are thought to be due to the deprivation of arterial blood in cortical areas, coinciding with venous and capillary stasis, in persons predisposed to nervous instability; as a consequence of this deprivation alterations are found in the large pyramidal cells of Betz. These changes lead to permanent alterations in the cortex of the nature of neuroglial sclerosis. The study of the mental states found in epilepsy is very complete and of great value. These are classed as the epileptic temperament, the paroxysmal psychoses, the psychical epileptic equivalents and the permanent interparoxysmal mental condition which leads to dementia. Much stress is laid upon the interparoxysmal conditions and the epileptic temperament, and the subject is treated more fully than in most other works, with perhaps a little undue emphasis upon the mental phenomena and the tendency to dementia from the influence of so many severe cases observed in an epileptic colony. Full consideration is given to the toxic origin of epilepsy and the author concludes that in some cases the epileptic condition may be of toxic origin. About 10% of the cases recover. In regard to treatment considerable stress is laid upon the benefits of a purin-free diet. The author, very wisely, we believe, opposes the teachings of certain New York writers who denounce the use of bromide, and upholds the efficacy of a judicious bromide treatment. Next to bromide he commends belladonna and zinc, which, in the early days, before the use of bromide, gave good results. We heartily commend the book as the most important monograph on the subject that has appeared in English since the classical work of Gowers, — a most valuable contribution to our knowledge.

As a result of the anti-spitting crusade in Pittsburg, according to the *Journal of the American Medical Association*, forty-three were arrested on the first day.

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THE RESULTS OF SECTION OF THE SYMPATHETIC IN ESSENTIAL EPILEPSY.

WHEN one carefully examines the recorded cases of epileptics treated by section of the cervical sympathetic, one is struck by the fact that the results obtained are most variable, for beside those cures which appear evident, there are numerous ameliorations and many unsuccessful results. Consequently, when this operation is undertaken, one is never sure that it will modify the attacks. And what is more important still is that the results are often published much too soon after the operation to be of any value. A number of patients have been followed for only a few weeks, a period ridiculously insufficient, inasmuch as in epilepsy one often encounters quiescence of the attacks for a considerable length of time, with or without treatment. These patients should be followed for years, which has been done for a certain number, and then usually it is found that the amelioration was merely temporary and what was taken for an improvement proved to be an unsuccessful result in the end.

Then again, one must be sure that the case is one of true epilepsy. Several published cases were afterwards found to be hystero-epileptics, while others considered as true epileptics in reality presented symptoms of associated hysteria, and it is easily understood that in these any interference might ameliorate the intensity or the frequency of the attacks. This is what appears to us not to have been sufficiently established in several published cases; it is true that very often the diagnosis is a difficult matter. These are the cases which, in the statistics, have given the greatest number of improvements or cure. In order to come to a just conclusion, one should take into consideration not simply the given result, because the precision with which the diagnosis is made, and more particularly the time during which the patient is under observation, have great importance in the determination of the ultimate results. These are the reasons why statistics differ so widely.

Alexander, in 1889, gave statistics of a series of twenty-four patients operated on by himself and obtained six cures, ten ameliorations, five unsuccessful results, two aggravations of the disease and one death by an intercurrent affection, in other words, 25% of cures. Jaboulay and Lannois, out of sixteen personal observations obtained only one cure, and this was in a hystero-epileptic, and three ameliorations; the condition of the other patients was not changed. At the Surgical Congress held in Paris in 1900, Jonnesco reported thirty-seven cases, which he had been able to follow for a considerable length of time, with the result that he obtained thirteen cures, eight improvements and sixteen unsuccessful outcomes, in other words 31% of cures. Chipault out of twenty-two cases obtained two cures and three improvements; in other words, successful results in 9%. Pilcz, out of eighty cases of essential epilepsy that he was able to follow for some time after the operation, reports 31% of doubtful improvement and not a single certain cure. Acevedo has published seven cases, all of which were improved so far as the attacks and mental condition are concerned, but the patients were followed only for a short time after the operation. White's statistics of twenty-three cases show 25% cures and 36% improvements. In several publications, Vidal records numerous instances of cure and a considerable number of improvements, while Braun, in 1901, records nine cases of sympathectomy without a single cure. In 1902 Obregia reported five cases that he followed for several years; the attacks which disappeared after the interference, recurred later and were quite as intense as before the operation. In the same year Winter collected nearly all the cases published up to that time numbering 213, but, out of these, he eliminated ninety-one, because they were reported too soon after the operation to be of any value, and out of the remaining 122 he found eight cures, or 6.6%; seventeen provisional cures, or 13.9%; twenty-three improvements, or 18.9%; and sixty-seven unsuccessful results, or 54.9%. From these results one should also eliminate all instances of hystero-epilepsy in order to seriously judge the value of section of the sympathetic, because it

should be recalled that these patients may be influenced by any operative traumatism, so that it appears that in true essential epilepsy successful results must be very few indeed.

All operators have not sufficiently considered the restrictions here mentioned, and consequently they judge sympathectomy very differently. Some, as Hahn and Dejerine, consider the operation inefficacious and dangerous. Amat and Mariani declare it useless and Eulenberg as absurd. There are a few surgeons who are partisans of the operation, Hopkins and Deaver at home, and Vidal in France. The latter gives as an explanation of his successes a series of reasons which should be mentioned. He selects his patients and only operates on those who are favorably influenced by amyl nitrite; he removes the entire cervical chain and only operates on patients who can be looked after properly after the operation.

Although post-operative care is certainly of great value, the majority of writers recognize that epileptics are little influenced by surgical therapeutics, and this is demonstrated by statistics based on properly diagnosticated cases followed for a long time, and is what might be foreseen when the present conception of epilepsy is considered, namely, that it is a syndrome rather than a morbid entity. To apply a uniform treatment to cases having a varying pathogenesis must of necessity lead to therapeutic failure.

Section of the sympathetic in essential epilepsy is, consequently, not a curative operation, for it is lacking in the pathogenic basis to be efficacious in all cases. The failure of the operation is in the first place and above all due to the fact that the cause of the attacks is not known, and secondly because one merely produces temporary disturbances in the cerebral circulation. Apropos of this, it would be most interesting to ascertain if there is any relationship between the duration of the vascular disturbances and that of the temporary improvements occasionally met with. If some knowledge on this point were obtained it might serve perhaps to aid the better understanding of the influence of circulatory disturbances in epilepsy.

It is known that cerebral anemia may have some influence in the production of the attacks in certain toxic epilepsies which, clinically, often appear essential. By the use of amyl nitrite, Vidal ascertained those cases in which anemia alone produced the attacks. In certain epileptics it stopped the attacks, and in these alone should the sympathetic be operated on. Vidal, however, did not operate on all the patients who were benefited by inhalations of this drug, and he does not consider this method as infallible. Pitres has shown by the treatment of seventeen patients that this drug could not serve for the recognition of the nature of the epilepsy and he has seen convulsions produced by it in hysterics, while it has remained without effect in supposed epileptics and in cases of large cerebral neoplasms, consequently in just the cases where it should provoke an attack according to Vidal's theory. There is no preliminary proof which can demonstrate to what extent cerebral anemia intervenes in the pathogenesis of the attack and therefore there is nothing which will indicate beforehand the effect of section of the sympathetic in a given case of epilepsy. To sum up, it may be said that this operation is, generally speaking, of little value, but that a more complete knowledge of the various forms of epilepsy and their pathogenesis might allow one to come to some conclusion relative to the advisability of operative treatment.

PLAGUE INVESTIGATION IN INDIA.

THE appalling death-rate from plague in the far East might appear a reflection on modern prophylactic medicine were it not for the great difficulty attending the treatment of the disease among the native population. That the English government is active in its efforts to abate its inroads is again shown by the last number of the *Journal of Hygiene* which contains reports on Plague Investigations in India issued by the Advisory Committee appointed by the Secretary of State for India, the Royal Society and the Lister Institute. An excellent account is given, arranged in most systematic manner, of our present knowledge of the natural history of the disease and the curious pathological and etiological facts which are now under investigation. A large number of plague rats have been studied with great care, post-mortem, with the end of determining the value of naked eye examination of suspected rats, to what extent microscopical examination alone may be relied upon for purposes of diagnosis, and finally whether the examination of a large number of plague infected rats might reveal evidence of the mode of infection on these animals, evidently a matter of the greatest importance from the standpoint of epidemiology. As a result of these experiments, the somewhat unexpected conclusion is reached that the naked eye method is decidedly superior

to the microscopic as an aid in diagnosis, and that with sufficient experience the diagnosis of plague may be made on the strength of the macroscopic appearances alone. There is apparently now no doubt that plague may be transmitted from rat to rat through the transference of fleas from a septicemic animal, and it therefore becomes important to determine the fate of the plague bacillus in the body of the rat flea; whether a single rat flea can transmit the infection; whether both male and female rat fleas can transmit the infection; whether other species of fleas can transmit it, and the mechanism by which the flea infects a healthy animal. It appears that the plague bacillus multiplies in the stomach of the rat flea, and also that a single flea may transmit the disease, whether male or female. Many other facts of the very greatest interest are deduced from this experimental study. Space does not permit us at this time to enter into a detailed consideration of all the conclusions reached, but it is evident that the rôle of the rat flea is coming to be well established, and it follows, therefore, that a beginning at least has been made toward the final extermination of the disease. We commend this admirable report to all those who may be interested in painstaking, scientific investigation on a problem of great practical import.

OPPORTUNITIES FOR MEDICAL WOMEN.

The useful place which women are now occupying in medicine is no longer to be questioned. It remains, however, to discover in what departments of the profession women are likely to be of the most service to the commuity, and reach the highest personal development. Suggestions which should be of value were given by Dr. Osler recently at the London School of Medicine for Women. On this occasion Dr. Osler pointed out that there were four channels open to women physicians. The first of these he especially commended, namely, work in connection with the laboratory branches of medicine. He thought that women were especially adapted for this type of work, and went so far as to say that much of the best work in bacteriology, histology and many departments of pathology was now being done by women. There can certainly be no question that expert women are rapidly becoming an essential adjunct of a well-equipped laboratory, whether or not they have a medical degree. In the second place there is an excellent opportunity for women in connection with institutions, and particularly those in which the insane are treated. Here, again, the last few years has seen a notable change, inasmuch as a large proportion of the hospitals for the insane are now provided with at least one woman physician. In the third place, so-called general practice offers opportunities. The diseases of women and children constitute the most natural field; but here, curiously enough, the difficulty is met that women themselves are more prone to distrust those of their own sex than men in a professional capacity. This, no doubt, time will do much to overcome. Finally, Dr. Osler gave, as the fourth field of usefulness for English women, work in India, where their duties would naturally fall in ameliorating the diseases and conditions of their own sex. The life there would be, no doubt, hard, but on the whole he thought happier than that which they would be likely to lead in their own country.

We note that Dr. Osler made no mention in his remarks of surgery as an appropriate field for women. It is in this field that many women practitioners are eager to shine, and it is, of course, a fact that much surgery is being done by women and with success. It is, however, not to be expected that pre-eminent success will be attained by women in this branch of medicine. The life of an active practising surgeon brings with it unquestionably a greater nervous strain than any other connected with the practice of medicine. If for no other reason than this, it is hardly to be expected that women practitioners in any considerable number will be able to compete in this most exacting, practical department of the profession. There remain, however, many other opportunities, some of which Dr. Osler has pointed out, which should be quite sufficient to meet the ambitions of those women who have determined to make medicine their life work, nor can we at the present time question that in certain departments of medicine there is no reason why women should not excel, and possibly in the future gradually usurp certain fields of work. The real problem before the women physicians of this and other countries is to determine the sphere of usefulness in which they may most fully develop and devote their best energies to its cultivation. They will certainly meet with no discouragement in this attempt from their colleagues of the other sex.

MEDICAL NOTES.

American Medical Editors' Association. — At the thirty-ninth annual meeting of this society, recently held at Atlantic City, sixty-four new members were elected. A committee on pub-

licity was appointed, the duty of which will be to see that the medical profession, through the medical press, is promptly informed upon all matters of general interest.

DEATHS IN THE PROFESSION. — Dr. Theodore von Jürgensen, professor of medicine and head of the Medical Polyclinic at Tübingen, has recently died at the age of sixty-seven.

Dr. Max Schueller has died at the age of sixty-four in Berlin, where at the time of his death he was in charge of the Surgical Department of the Polyclinic of the Association of Domestic Hygiene. He had of late devoted himself particularly to a study of the etiology of cancer.

DEATH-RATE FROM PHTHISIS IN ENGLAND AND WALES. — As elsewhere, recent statistics on tuberculosis show that in England and Wales there has been a decided decline in the death-rate. This has been a very general experience in civilized countries, and it is also noteworthy, as stated in the *British Medical Journal*, that there has been a very distinct tendency to a postponement of the age of death and probably therefore the age of infection. Fifty years ago the disease was most fatal in both sexes at the age-period twenty-five to thirty-five years. In females there was no change during the next two decennia, but in males the age of greatest mortality advanced to the period thirty-five to forty-five years, though in the first of these two decennia (1861-70) it was only a little more fatal at this age-period than in the age-period twenty-five to thirty-five. In the last decennium the age of greatest incidence advanced for men to the period forty-five to fifty-five years, and for women to the period thirty-five to forty-five years. What explanation can be offered for this change, we cannot venture to say; it is improbable that it can be due merely to an extension of the life of the consumptive. Whatever its explanation, it appears to mean a great saving of life during the most useful years, and must therefore represent a great gain to the nation.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 24, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 40, scarlatina 23, typhoid fever 9, measles 41, tuberculosis 50, smallpox 0, leprosy 1.

The death-rate of the reported deaths for the week ending July 24, 1907, was 15.74.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 20, 1907, was 158, against 219 the corresponding week of last year, showing a decrease of 61 deaths and making the death-rate for the week 13.52. Of this number 93 were males and 65 were females; 154 were white and 4 colored; 98 were born in the United States, 57 in foreign countries and 3 unknown; 34 were of American parentage, 103 of foreign parentage and 21 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 36 cases and 2 deaths; scarlatina, 32 cases and 0 deaths; typhoid fever, 16 cases and 2 deaths; measles, 47 cases and 1 death; tuberculosis, 68 cases and 18 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 12, whooping cough 1, heart disease 14, bronchitis 2 and marasmus 2. There were 7 deaths from violent causes. The number of children who died under one year was 27; the number under five years, 39. The number of persons who died over sixty years of age was 29. The deaths in public institutions were 57.

There were 1 case and 4 deaths reported from cerebrospinal meningitis during the week.

A CASE OF LEPROSY. — It is stated that a case of leprosy has recently appeared at the Massachusetts General Hospital in the person of a domestic of Russian descent who went to that institution for treatment. The diagnosis has been confirmed, and she will be sent to the leper hospital on Penikese Island in Buzzards Bay.

NEW YORK.

A CENTENARIAN.—John Kelderhouse, of Schenectady, N. Y., died on July 18, at the alleged age of one hundred and seven years. He was a native of Livingston Manor, N. Y., and was the father of thirteen children.

CONTAGIOUS HOSPITAL IN BRIGHTON. — An order granting the right to the Massachusetts Homeopathic Hospital to maintain a hospital for contagious diseases in Brighton has passed the Boston Board of Aldermen.

ACCORDING TO "SCIENCE." — The Paris medical faculty has recently announced that henceforth the incumbents of the special chairs of anatomy, histology, physics, chemistry and pharmacology will not be allowed to take posts as physicians or surgeons in the hospitals. Professors of these branches will be obliged to agree to devote themselves exclusively to their educational work.

Prohibition of Use of Unclean Milk Cans. — Governor Hughes has signed the bill recently passed by the Legislature, which amends the agricultural law, so as to prohibit the use of unclean and unsanitary milk cans, the confiscation of which is directed. The bill also provides for the appointment of two milk can inspectors in New York City.

Bequests. — Among the charitable bequests in the will of the late Isador Wormser, of New York, are: $2,500 each to the Mount Sinai Hospital and the United Hebrew Charities Association, and $1,000 each to the Montefiore Home and Hospital for Chronic Invalids and to the New York Roman Catholic Orphan Asylum.

Death of the Heaviest Person in New Jersey. — Mrs. Margaret McMahon, of Newark, N. J., who is stated to have been the largest person in that state, died on July 12, at the age of forty-eight years. Her weight exceeded five hundred pounds and part of the house had to be torn away in order to move the specially constructed coffin. When the body was in the coffin it required twelve men to lift it.

Employers' Liability Law Constitutional. — In a decision handed down on July 18, Judge Adams, in the United States District Court, declared the employers' liability law constitutional. This is the first decision in the state of New York in regard to this law. It is stated that in Georgia and Kentucky federal judges have decided that the law is unconstitutional, while in Illinois its constitutionality has been upheld. Judge Adams made the decision in the suit for damages of one Patrick Lancer, a longshoreman, who was injured while at work on the steamship *Columbia*, in October, 1906; stating, in his opinion, that the plaintiff was entitled to receive damages from the steamship company.

Boat for Tuberculosis Patients. — The *Southfield*, one of the old ferry boats of the Staten Island line, which has been put out of commission by the newly constructed municipal boats, now running to that point, has been placed by Commissioner Bensel, of the Department of Docks and Ferries, at the disposal of the committee on tuberculosis of the Charity Organization Society. The boat is a large one, with double decks, and it has been fitted up as a tuberculosis camp, with hammocks, steamer chairs, etc. A trained nurse is in attendance, and once a week the committee meets on the boat and the medical members of the committee serve each two weeks in turn as visiting physicians. The patients who are sent from the various dispensaries of the city, spend the day in the fresh air, and in the evening, with the exception of a few male patients, who remain all night on board, are dismissed to their homes. Each receives from three to eight eggs and from three to eight glasses of milk daily, and at noon a meal, consisting of bread and butter, hot tea or coffee and a cooked egg, is served. In addition, the patients are permitted to bring with them whatever food they choose. Although this undertaking has been but a short time in operation, the results appear to have been very satisfactory. A member of the committee, in speaking of them, recently said: "The patients are putting on pounds and the color is coming back to whitened cheeks in a wonderful manner. Now and then a good friend sends us some fruit, magazines or flowers, and with these and the extra diet and fresh air, our patients are getting along famously."

Obituary.

EMMANUEL MENDEL, M.D.

Few who have visited Berlin during the past two decades have failed to attend the courses of Emmanuel Mendel, who has recently died at the age of sixty-seven. The immediate cause of death was a weak heart and arteriosclerosis. Mendel was born in Silesia, studied at Breslau and Berlin, and received his degree in 1861, his dissertation being on a neurological topic. From the first his preference for this branch of medicine was evident, although for some years he practised in Pankow, a suburb of Berlin, as a general practitioner. This village is now well known to physicians as the site of Mendel's asylum. During 1864, 1866 and 1870 Mendel did military service and was twice wounded. He began to teach at the University of Berlin in 1873, and early made a reputation, particularly by his course on Responsibility. His chief claim for recognition in the future will doubtless lie particularly in his work in psychiatry. Among his most notable contributions were his papers on progressive paralysis of the insane, on diseases caused by accident and on mania. He was widely sought in an expert capacity by the courts and had much to do with the codification of the German common law, particularly in relation to the lunacy laws. Personally he was genial, large-hearted and generous. His place will be hard to fill in the university in which he taught for upwards of thirty years.

Current Literature.

The Journal of the American Medical Association. June 29, 1907.

1. Smith, S. McC. *Specialization in Its Relation to General Medicine.*
2. Stucky, J. A. *Non-Operative Treatment of the Middle Turbinate.*

3. *VERHOEFF, F. H., and ELLIS, E. K. *The Bactericidal Values of Some Widely Advertised Antiseptics.*
4. EATON, F. B. *The Relative Value of Clinical Medical and Surgical Knowledge to that of the Laboratory.*
5. *LICHTY, J. A. *The Early Premonitory Symptoms of Pernicious Anemia.*

3. Verhoeff and Ellis have studied the bactericidal power of a considerable number of preparations for which antiseptic power has been claimed by the manufacturers. Some of the most widely advertised, used in full strength, failed to destroy the staphylococcus aureus after an exposure of four hours. Others showed more or less antiseptic power when acting alone, but when mixed with an equal volume of hydrocele fluid all failed to destroy the vitality of the staphylococcus aureus after an exposure of over two hours. The authors conclude that although antiseptic washes may be of some value in destroying bacteria on the surface of infected areas, thus preventing reinfection, it is impossible to find an antiseptic which will kill bacteria in the tissues in the presence of serum without injury to the tissues.

5. Lichty has studied 20 cases of pernicious anemia with reference to their early symptoms. The disease he regards as the result of a toxemia, mentioning the work of Herter, who has found evidence suggesting the B. aërogenes capsulatus in the intestinal tract as a possible producer of the hemolytic agent. The symptoms of the disorder may be placed mainly in three groups, as belonging to the digestive system, the nervous system and the cardiovascular system. In the digestive system it has long been recognized that in pernicious anemia there is often present the condition of achylia gastrica. Of the author's 20 cases achylia was present in 14, and as an early symptom in 9. Diarrhea often occurs. Nervous symptoms may occur early or late. Cases have been reported in which the spinal cord symptoms preceded the anemia. Of Lichty's 20 cases 4 showed symptoms of peripheral neuritis and 2 showed symptoms of tabes dorsalis, but the nervous symptoms were in none the first to appear. The cardiovascular symptoms, palpitation, dyspnea, etc., were present in all, but not before the diagnosis was made from the blood, except in one case. [F. W. P.]

MEDICAL RECORD.
JUNE 29, 1907.

1. VALINTINE, F. C., and TOWNSEND, T. M. *Massage of the Prostate and Stripping the Seminal Vesicles.*
2. PRAGER, P. *A New Method of Identification Superseding Dactyloscopy.*
3. DICKEY, W. A. *Diagnosis and Treatment of Gastric Ulcer.*
4. SMITH, E. L. *Asthma: Observations on Three Hundred Cases.*
5. FRIDENBERG, P. *Mental Symptoms in Nasal Affections.*
6. CLARK, L. P. *The Experimental Effects of Tobacco upon the Nervous System.*
7. *CLAPP, H. C. *Diet in Pulmonary Tuberculosis.*

7. Clapp says that diet is a most important factor in the treatment of tuberculosis. A consumptive is much more likely to eat too little than too much. Systematic overfeeding and proper digestion of the food are the accepted remedies. The food must be palatable and well served and the amount must vary with the patient and his circumstances. The outdoor air will enable him to assimilate large amounts. Milk and eggs are the best foods to produce fats, which are most necessary to the patient. The author advocates three solid meals a day, with lunches between of milk and eggs, about three quarts of milk and six eggs a day being taken. Fresh meats are especially necessary for these patients, but a mixed diet is undoubtedly the best borne. Meat juice is valuable. Pastry, candy, fried foods and cabbage should be let alone. Alcohol is not advisable, but coffee, tea and chocolate may be taken moderately.

NEW YORK MEDICAL JOURNAL.
JUNE 29, 1907.

1. KEYES, E. L. *The Prenuptial Sanitary Guarantee.*
2. COPLIN, W. M. L. *Departmental Influence in the Suppression of Social Disease.*
3. PURRINGTON, W. A. *Professional Secrecy and the Obligatory Notification of Venereal Diseases.*
4. KAUFMANN, J. *Gastro-intestinal Disturbances in Influenza.*
5. REARDON, T. J. *Acute Oedematous Eversion of the Ventricle of Morgagni.*
6. BRYANT, W. S. *The Radical Mastoid Operation.*
7. *DUNHAM, J. D. *The Diagnosis and Treatment of Gastric Neuroses.*

7. Dunham's article is a plea for more careful study and more rational treatment in the cases of gastric neuroses, which make up the great majority of all cases with stomach symptoms. The diagnosis requires a more general use of the stomach tube to exclude the presence of organic disease. Certain special forms of neuroses are mentioned. Nervous anorexia or complete loss of the sensation of hunger is difficult to overcome and may simulate early tuberculosis or cancer. The treatment requires that all possible methods of diagnosis be employed and that the condition be fully explained to the patient; then, careful feeding with small amounts at frequent intervals, the three main meals of the day being preceded by a bitter tonic, will usually effect a cure. In the more advanced cases residence in a sanatorium or even forced feeding by the stomach tube may be necessary. Nervous vomiting is a serious condition, the diagnosis of which must be made by exclusion, and if possible by detection of a cause of the attack in some nervous influence. The vomiting usually occurs easily, without effort, and without regard to the kind of food ingested. Hospital treatment, high frequency current, forced feeding and hydrotherapy will effect a cure in most cases. Under the heading of neurasthenia gastrica are included many ill-defined disturbances of digestion of undoubted nervous origin, following debilitating influences and causing varied symptoms. The diagnosis is to be obtained by close study with special care to exclude ulcer. Where a positive diagnosis is impossible, a rest cure should be instituted as appropriate either to ulcer or to neurosis. Some patients may be relieved by simple reassurance. In more cases the improvement is slow. Residence in a hospital is desirable, also cold baths, systematic feeding, tonics, rest and methods of suggestion. [F. W. P.]

THE LANCET.
JUNE 22, 1907.

1. BARKER, A. E. J. *The Nature and Treatment of Piles.*
2. SAVILL, T. D. *The Treatment of Hysteria.*
3. *ROUGHTON, E. W., LEGG, T. P., and EMERY, W. D'E. *Two Cases of Excision of Ruptured Spleen.*
4. *HOWELL, C. M. H. *A Consideration of Some Symptoms which may be Produced by Seventh Cervical Ribs.*
5. SCATLIFF, H. H. E., HOBHOUSE, E., and BUSHNELL, F. G. *A Case of Acute Leukæmia (Lymphocythemia).*
6. COLMAN, H. C., and MARSHALL, C. R. *A Dangerous Dry Shampoo.*

3. Roughton, Legg and Emery report in detail operations on two cases, respectively aged seven and twelve years, of ruptured spleen. In all such cases the writer believes that unless the injury is very slight, excision of the spleen *in toto* is best. In the reported cases where a healthy spleen was removed in children, recovery has been generally rapid. There are three classes of cases: (1) convalescence is rapid and complete; (2) serious symptoms develop for a while, followed by a complete recovery, and (3) an intermediate group characterized by enlargement of lymph glands, anemia, some enlargement of the thyroid, emaciation with, later, a rapid recovery. In these two cases here reported, the post-operative symptoms were rapid emaciation and weakness, great anemia, drowsiness and intermittent elevation of temperature. The reds were 3,652,000 and the hemoglobin 60% immediately after the operation; regeneration began six days later, with a complete restoration to normal in a month. The leucocytes remained at about 23,000 for six days and then dropped to 10,000, with a secondary rise a day later to 17,000 and a gradual reduction to normal. There were a few nucleated red cells and myelocytes. There was no eosinophilia after operation. There was a decided lymphocytosis throughout, which has persisted to the present, three years after the operation.

4. Howell gives results of his studies of 16 cases of cervical ribs. The most important point in these anomalies is that even a rudimentary cervical rib may cause pressure on the brachial plexus with marked symptoms. In all his cases there was pain, numbness and weakness or tingling sensations in one hand; all these symptoms disappeared after the removal of the ribs by operation. A careful differential diagnosis must be made from syringomyelia, anterior poliomyelitis, peripheral neuritis, and certain other brachial palsies. Ocular changes, common in syringo-myelia, are unknown in this condition; any sensory change at once excludes poliomyelitis or progressive muscular atrophy. Scoliosis may be present in some cases. The x-ray will generally clear up all doubt as to the condition. [J. B. H.]

British Medical Journal.
June 22, 1907.

1. *Canthe, J. *Clinical Observations on Tropical Ailments as they are met with in Britain.*
2. Forsythe, D. *Referred Pain and Its Diagnostic Value.*
3. Pope, F. M. *The Treatment of Locomotor Ataxy by Fibrolysin.*
4. *Maclean, H. *On the Causes and Significance of Certain Ambiguous Reactions Obtained on Testing Urine for Sugar.*
5. Parker, R. *Ligature of Common Carotid for Arterial Dilatation and Epilepsy.*
6. Symmers, W. St. C., and Wilson, W. J. *On the Cultivation of the Meningococcus in the Present Epidemic of Cerebrospinal Meningitis in Belfast.*
7. Macewen, W. *The Role of the Various Elements in the Development and Regeneration of Bone.*

1. Canthe gives brief summaries of the diagnosis and treatment of some of the more common tropical diseases, such as malaria, in which he mentions his own case of "malarial neuritis," hemoglobinuria, dysentery and sprue, hepatic abscess and others. The various descriptions are brief, but are of value to the general practitioner on account of their practical nature.

4. Maclean calls attention to the fact that while Fehling's test for sugar in aqueous solution is the most delicate one we have, in certain urines, with small amounts of sugar, this test shows no reduction, owing to the fact that kreatinin is capable of holding in solution a certain amount of the reduced suboxide of copper. Kreatinin itself in more than normal amounts (1-2 gm. per day), will act as a reducing agent on copper, giving rise to various ambiguous reactions sometimes seen in urines known to be free from sugar. Contrary to the idea generally held, uric acid and urates do not have any reducing action on copper; phosphates, on the other hand, can do this to a slight extent. To avoid errors caused by these substances, all of which predominate in urines of a high specific gravity, any urine of a high specific gravity, 1,028-30, should be diluted down to 1015 before testing. By so doing many errors will be avoided. [J. B. H.]

Deutsche Medizinische Wochenschrift, No. 23.
June 6, 1907.

1. *v. Leyden, and Bergell, P. *The Pathogenesis and the Specific Destruction of Cancer.*
2. Greeff, R. *Peculiar Bodies (Parasites?) in Trachoma Cells.*
3. *Bassenge, R. *The Durability and Efficiency of the Typhoid Protective Toxin Prepared by the Brieger Method.*
4. Pick, A. *A Proposal for a Measure of the Intensity of the Patella Reflex.*
5. Klemperer, F. *Methods and Significance of Estimation of the Pulse Pressure.*
6. Klose, H. *The Use of Papayotin in Laryngeal Diphtheria.* (Concluded.)
7. Herschel, K. *A New Ear Electrode.*

1. Von Leyden and Bergell give a preliminary report of some experiments on the injection of a newly discovered liver ferment into tumors. This ferment is obtained from the freshly macerated livers of animals. It has little effect on isolated carcinomatous tissue, but injected *intra vitam* into the tumor mass it causes an extensive and markedly selective destruction of the cancerous tissue, leaving an unevenly marked boundary between sound and diseased tissue. This proteolytic ferment was injected into three cases, one a large sarcoma of the neck, another a recurrent cancer of the breast, and a third a carcinoma of the uterus. All these cases had numerous metastases and subsequently came to autopsy. In each case the injection was shown to have caused an extensive destruction of tissue resembling the necrosis and cellular solution due to enzymotic action.

3. Bassenge found typhoid toxin, prepared after the method advised by Brieger, effective after having been carried for two years on German naval vessels in tropical seas. This toxin is prepared by shaking typhoid bacilli in distilled water for twenty-four hours and filtering off the bacilli. It forms, according to the author, a sure and practicable means of protection against typhoid and one whose efficiency is not affected by change of climate and age. [L. G. M.]

Münchener Medizinische Wochenschrift, No. 22.
May 28, 1907.

1. *Spielmeyer, W. *Sleeping-sickness and General Paresis.*
2. *Groedel, F. M. *The Use of the X-ray in the Study of the Stomach.*
3. Bachmann, E. *Percussion Findings in Pleurisy with Effusion.*
4. Bárány, R. *The Investigation of the Reflex Vestibular and Optical Eye Movements, and their Significance in the Focal Diagnosis of Eye Palsies.* (Continued article.)
5. Perutz, F. *Abdominal Arteriosclerosis.* (Continued article.)
6. *Kayser, H. *The Technic of the Use of Ox-bile for Growing Typhoid Bacilli from the Blood.*
7. Grube, K. *A Method, Suitable for Private Practice, to Quantitate the Sugar in Urine.*
8. *Braatz, E. *Lead Poisoning Following Gun-shot Wounds.*
9. *Witzenhausen. *Phimosis as a Cause of Constitutional Manifestations in Childhood.*
10. Kaestle. *A New Device for Fixation and Compression in Roentgenography.*

1. Spielmeyer shows the points of resemblance between sleeping-sickness and general paresis, clinical and anatomical. The most striking of these is the lymphocytosis of the spinal fluid and the marked infiltration with lymphoid and plasma cells in the cortex, especially about the vessels. Degeneration of the pyramidal tracts, so common in paresis, was lacking in Spielmeyer's cases of sleeping-sickness. The relation of syphilis to trypanosome infections is interesting in this connection, for on the one hand syphilis is generally considered the most important cause of paresis and tabes, on the other, the author has produced the lesions of tabes in dogs by infection with the organism of tsetse-fly disease (trypanosoma Brucei). Should Schaudinn's theory that the spirocheta pallida is closely related to the trypanosomes be substantiated, the reason for this similarity in the lesions will be apparent.

2. This article by Groedel describes, with the aid of diagrams, the results of x-ray examinations of the stomach, chiefly after the ingestion of food mixed with bismuth. By the author's method of orthodiascopy of the stomach, exact measurements are possible. The x-ray examination gives a much more exact idea of the position and shape of the stomach than does the common method of inflation with air.

6. Kayser states that in using his method of cultivating typhoid bacilli from the blood (5 cc. sterilized ox-bile incubated 20 hours wth 2.5 cc. blood and then plated on Endo's or Conradi-Drigalski's media) it is best, in case of a negative result, to make other plates from the bile mixture at the end of 48 and 72 hours, because in some instances growth may be delayed. The use of pure bile salts instead of bile, as advocated by Meyerstein, has given inferior results in his hands. Kayser reports 94% of 69 cases positive by this method in the first week; the frequency with which bacilli can be demonstrated in the blood diminishes progressively as the disease goes on, falling to 43% in the third week.

8. Braatz has collected 6 cases from the literature in which the symptoms of lead poisoning followed gun-shot wounds at a variable period and disappeared after the removal of the bullet.

9. In Witzenhausen's cases phimosis in infants caused distention of the bladder with obstinate constipation, frequent urination and sometimes marasmus and convulsions. The prompt recovery from these symptoms after circumcision is worthy of note. [W. T.]

THERAPIE DER GEGENWART.
MAY, 1907.

1. FÜRBRINGER, P. *The Treatment of Bronchial Asthma.*
2. *TEICHMANN, F. *Therapeutic Uses of Digalen.*
3. *MEYER, H. *The Treatment of Chronic Constipation with Regulin.*
4. *KLEMPERER, G. *Escalin, a Drug for Checking Gastro-intestinal Hemorrhages and to Promote Healing in Gastric Ulcer.*
5. UFFENHEIMER, A. *The Theory of Infant Feeding from the Standpoint of Recent Biological Methods.*
6. *MÜHSAM, R. *The Treatment of the Urinary Retention of the Prostatic by Means of Suprapubic Fistula and Cystopexy.*

2. Teichmann reports on the results of the use of digalen in Stadelmann's clinic. Digalen is a pure crystalline preparation of digitoxin in a soluble form. When given by mouth it has much the same effect as preparations of digitalis; it is not adapted for subcutaneous or intramuscular use, because it causes local irritation. When given intravenously the effect is almost immediate, and there is a lengthening of diastole, the systole is stronger, the blood pressure rises and diuresis takes place. The rise in blood pressure is due partly to a vasomotor constriction which affects also the coronary arteries. For this reason the intravenous use of digalen is contraindicated in advanced cases of myocarditis and especially in coronary sclerosis, where the sudden rise in the peripheral resistance combined with a smaller supply of blood to the heart may result in collapse. The intravenous use of digalen represents a great advance in the treatment of acute cardiac failure where immediate stimulation of the heart muscle is required.

3. Meyer's results from the use of regulin (agar-agar plus a small amount of cascara) in the treatment of chronic constipation have been excellent, like those of most previous writers on the subject. Out of 71 cases 62 were favorably influenced, so that he considers it by far the best drug for constipation. Its special advantages lie in the fact that it is not necessary to increase the dose after long continued use, and that its action is almost wholly mechanical. The dose is a teaspoonful to three dessertspoonfuls a day, according to circumstances. It is best given in soup, mashed potato or apple sauce.

4. In escalin, Klemperer recommends an absolutely non-poisonous substitute for bismuth subnitrate in the treatment of gastric ulcer. It consists of very finely powdered aluminum mixed with glycerin and given in emulsion with water. The dose is 10 gm. Animal experiments showed that the aluminum forms a dense coating over the mucous membrane and is quite adherent to it. Twelve cases of profuse gastric hemorrhages all recovered under the use of escalin, and what is especially noteworthy, the blood soon disappeared from the feces, even for delicate chemical tests. In simple gastric ulcer without hemorrhages, the results were also very encouraging, for all recovered and the occult blood disappeared from the feces within 24 hours after the reappearance of the aluminum. The action of escalin is to make a thick crust over the ulcer, thereby stopping the bleeding and giving a chance for healing to take place.

6. The operation of cystopexy or attaching the bladder to the anterior abdominal wall has a beneficial effect on urinary retention secondary to hypertrophy of the prostate, apparently because it exerts a pull on the opening of the urethra into the bladder. In an old man whose general condition was so bad that prostatectomy was out of the question, Mühsam achieved a cure by the combination of suprapubic fistula according to Witzel, and cystopexy. Three months after the operation the fistula was closed and the function of the bladder normal. [W. T.]

DEUTSCHES ARCHIV FÜR KLINISCHE MEDIZIN, BD. 89, HEFT 5 and 6.

1. MATTHES, M. *Some Observations on the Peripheral Circulation.*
2. *KUSUMOTO. *The Genesis of Renal Hemorrhage in Nephritis.*
3. *LINSER, P., and SICK, K. *The Relation of Uric Acid and Purin Bases in the Urine and Blood of Patients Treated with X-ray.*
4. MÜLLER, L. R. *Clinical Contribution to the Physiology of the Sympathetic Nervous System.*
5. *KÜLBS, F. *Clinical Contribution to the Pathology of Blood Pressure.*
6. *BITTORF, A., and JOCHMANN, G. *Contribution to the Knowledge of Sodium-Chloride Metabolism.*
7. *ROGGE, M., and MÜLLER, E. *Tabes Dorsalis, Diseases of the Circulatory System and Syphilis.*
8. *SCHULTZ, W. *The Hydrocephalic Stage of Epidemic Cerebrospinal Meningitis.*
9. HESSE, E. *Influence of Smoking on the Circulation.*
10. ESSER. *Blood and Bone Marrow after Cessation of Thyroid Function.*
11. *SCHMOLL, E. *Paroxysmal Tachycardia.*
12. SCHIEFFER. *Cardiac Enlargement as the Result of Bicycling.*

2. In a paper published in 1906 (reviewed in this JOURNAL, 1907, Vol. CLVI, p. 362) Askanazy discussed the occurrence of hematuria associated with chronic nephritis. He considered the hemorrhage to be the result of paroxysmal congestion intensified by the increased blood pressure of the condition. Kusumoto, in this paper, describes a case in which he found rupture of the small vessels of the pelvis of the kidney, which vessels histologically appeared to be veins. He does not think that the congestion theory advanced by Askanazy can be a satisfactory explanation of the condition, since hematuria is relatively uncommon in these forms of nephritis in which high tension is a very constant feature. Another explanation advanced is that the hemorrhage comes from the increased venous stasis associated with the act of defecation. However, physiologically, any increase in general pressure is associated with contraction of the renal vessels, but this matter of compensatory function may be absent in the vessels of chronic nephritis; consequently with the increase in general pressure, if there is associated a temporary venous stasis, this may be sufficient to produce rupture of the vessels. At any rate, in his case he has shown the actual anatomical rupture of veins in the pelvis of the kidney, without any associated inflammatory change.

3. The action of the x-rays on the metabolism in cases of leukemia has been very extensively studied, and especially the changes in the excretion of uric acid. However, these studies have given rather unsatisfactory results, because the patients are in such a physical conditions owing to the disease, that strict diet regulations cannot be carried out. Linser and Sick have studied the effect of the x-rays on the uric acid and purin bases in patients with normal blood condition, in which the diet could be strictly controlled; the cases were under treatment for local skin conditions. To exclude the exogenous purin bases a diet was used free from nuclein. Instead of short exposures to the x-rays, long exposures (4 to 8 hours) with the tube 100 to 150 cm. distant were used. It was found that these individuals showed as a result a decreased number of leucocytes associated with an increase of the total nitrogen excretion and an increase in uric acid and purin bases. They believed that both the leucocytes in the circulating blood and in the leucocytic tissue are affected. It is probable that this destructive action on the leucocytes is due to the formation of some toxic substance soluble and circulating in the blood. This view is supported by the long continuance of the leukopenia after exposure to x-ray cases and the incubation period necessary before the effect of the x-ray is evident. They found during exposure to the x-ray also an increase in the uric acid present in the circulating blood.

5. Here are recorded blood pressure observations on a number of cases representing various pathological conditions. Some of these are of considerable interest and

they make an addition to our knowledge of the blood pressure changes in certain conditions. The first case was one of tuberculous meningitis, in which cessation of voluntary respiration was followed by a greatly increased blood pressure (220 mm. of mercury). Artificial respiration produced at first a fall, followed by a rise to 200 mm. of mercury. These fluctuations in pressure continued, with the level constantly falling, until the patient died, two hours and twenty minutes after the beginning of the observations. In a case of angina pectoris the attacks were accompanied by rises in blood pressure. Both the attacks and the rise in blood pressure were favorably influenced by mechanical artificial respiration. In another case with the same condition there was a decreased blood pressure during the attack. A case of bronchial asthma showed an increased blood pressure and the attacks disappeared during artificial respiration. Other cases illustrated the possibility of the association of acute cardiac insufficiency accompanied by edema of the lungs and chronic passive congestion of the other organs with increased blood pressure. In a case of acute alcoholism the blood pressure was sub-normal, as low as 78 mm. of mercury, and the same was true of a case of tobacco poisoning. Four cases of high blood pressure in young individuals are reported. However, in these there is no report of the urinary condition and the presence of a chronic nephritis as a possible cause does not seem to have been considered. No general conclusions are attempted on the basis of these scattering observations.

6. These two observers in patients on low diet and in bed have determined the total fluid and sodium chloride content of the food and of the urine daily, and observed the effect of increasing at times the salt given. In pneumonia they find a decreased elimination of salt uninfluenced by an increase in salt given by mouth. The cause of this salt retention, they think, lies not in a primary retention of water, but in a peculiarity of the tissue and pneumonic exudate. In cases with pleuritic exudates they find no salt retention, but an increase in the salt output after increasing the salt intake. Salt can even act as a diuretic in these cases. In heart disease the water and salt excretion depends upon the circulatory condition, but each can be independent of the other. Salt increase in the diet does not lead to water retention, but can even have the opposite effect. The salt content of non-nephritic exudates, transudates and edema is frequently considerably higher than that of the edema of renal disease. In nephritis considerable variation was found in individual cases, but in general there is a good salt elimination which may be entirely independent of the water excretion. In most of these cases an increase in the salt of the diet increases the output of salt in the urine, and the relations of the salt excretion give no index of the severity or kind of renal lesion. The theory of a primary salt retention as a cause of edema is not supported by these observations. The edema appears rather to be dependent upon vascular changes. In no case were injurious effects observed from increasing the salt in the food, and consequently the salt-poor diet, as advised by others, seems to these observers unjustified, unless one means by such a diet merely a non-irritating diet, such as has been long used in nephritic cases. For them there is no virtue in a simple salt reduction in the diet.

7. Rogge and Müller point out the very great frequency of the association of tabes dorsalis and circulatory disease, especially disease of the aorta and aortic valves. In 24 selected cases two thirds showed this combination, and in one third there was aortic aneurysm. Another striking fact was the frequency with which the circulatory lesions were symptomatically latent. This association may explain some cases of sudden death in tabes and some of the so-called cardiac crises. It is also a further evidence of a syphilitic etiology, since we know that syphilis is a cause of such circulatory lesions, and rheumatism was strikingly uncommon in the past history of these cases. Not infrequently both conditions (spinal and circulatory) have been overlooked until the sudden development of a cerebral lesion ensued.

8. In cases of hydrocephalus following epidemic meningitis, Schultz has practised cerebral puncture. The result is a clearing of the sensorium, improvement of the appetite, cessation of convulsions and a general betterment of the condition. However, these are transitory, and most cases will probably finally die in spite of repeated tappings.

11. Schmoll has studied two cases by the graphic method, and concludes from these that paroxysmal tachycardia is due to the presence of extra systoles, which have their origin in the auriculo-ventricular bundle of His. [H. A. C.]

REVUE DE CHIRURGIE.

MAY, 1907.

1. *TEVRIER, F., and DUJARIER, C. *Prolonged Priapism.*
2. LE DAMANY, P. *Congenital Dislocation of the Hip.* (Continued article.)
3. *SCHWARTZ, A., and DREYFUS, P. *Rupture of the Lung without Fracture of the Rib.*
4. *DÉLORÉ, X., and CHALIER, A. *Perineal Extirpation of Cancer of the Anus and Rectum.*
5. *HARDOUÜN, P. *Remarks on the Treatment of Glandular Cysts of the Pancreas.*
6. DÉVÉ, F. *Hydatid Cysts of the Liver Containing Air.* (Continued article.)
7. GUIBÉ, M. *Valvulus of the Small Intestine and of the First Part of the Large Intestine.* (Continued article.)

1. The authors have collected the histories of 48 cases of persistent priapism from the literature, to which they add one personal observation. Priapism lasting weeks or months may be of various origins: (1) nervous; (2) traumatic; (3) inflammatory; (4) leukemic; (5) idiopathic. The most frequent cause is found in leukemia. In the majority of instances only the corpora cavernosa are involved, though occasionally the spongiosum has been found congested, in which case there is usually difficulty with urination. The affection is often extremely painful. Whether the mechanism by which the condition is brought on be by thombosis, by a hematoma compressing the return blood vessels, or by nervous impulses, cannot be decided in the light of our present knowledge. Recovery is the rule. Of the 48 cases collected, 31 recovered spontaneously, 5 dying later of leukemia. Ten cases were cured by incision. The final result in most cases is probably loss of function. Operation is to be advised.

3. Schwartz and Dreyfus report the case of a man of nineteen who, falling under the wheels of a wagon, sustained a fatal rupture of the lung without fracture of any rib. A marked feature of such cases is emphysema of the neck and upper chest, the air reaching this location from the peribronchial and mediastinal tissues. Such cases nearly always occur in children or in young adults. The visceral pleura is often found intact, or presenting a few minute ruptures. Subpleural ecchymoses are numerous. In the author's case there was but little hemoptysis and only a moderate amount of blood free in the pleural cavity. [Such cases present a condition a step more critical, but in every way comparable with those of so-called traumatic asphyxia from compression of the thorax.]

4. The authors report the result of 19 cases of extirpation of anal and rectal cancer by the perineal route. The immediate operative result was favorable in all but 2 cases, one of which died of peritonitis, the other of collapse. The end results in 10 cases, lasting from four months to eight years after operation, showed either good health without recurrence, or death from some intercurrent disease. An artificial anus is to be avoided whenever possible and in the above series was used but once.

5. Hardoüin reports the case of a man of forty-eight who, three weeks after a severe abdominal trauma, noticed a mass in the epigastrium, somewhat to the left of the middle line. This was accompanied from time to time by violent colic, vomiting, distention and tenderness. There were neither sugar nor albumin in the urine. On distention, the stomach was found to lie in front of the tumor. At operation two liters of fluid were evacuated from a pancreatic cyst, the wall of which was found everywhere firmly adherent to neighboring structures. A second incision was made in the left loin, and the cyst drained through this, the original incision being closed. Recovery was prompt and in three months the fistula had closed. This procedure of bringing the walls of a large adherent cyst to the edges of a skin wound (called "marsupialization") is strongly advocated when dissection and complete removal are impossible. [W. C. Q.]

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 13, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,456	559	Quincy	6	3
Chicago	—	—	Waltham	7	1
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	9	—
Baltimore	223	89	Brookline	4	—
Cleveland	—	—	North Adams	4	1
Buffalo	—	—	Chicopee	6	4
Pittsburg	—	—	Northampton	6	0
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	3	—
Providence	66	31	Hyde Park	1	—
Boston	184	58	Melrose	—	—
Worcester	35	11	Newburyport	—	—
Fall River	31	17	Woburn	6	4
Cambridge	16	4	Marlboro	2	0
Lowell	28	12	Westfield	5	1
Lynn	19	6	Peabody	—	—
New Bedford	23	3	Revere	4	2
Springfield	13	4	Attleboro	5	0
Lawrence	20	9	Clinton	1	0
Somerville	20	3	Adams	—	—
Holyoke	25	9	Gardner	3	—
Brockton	7	1	Milford	—	—
Malden	10	1	Watertown	1	0
Chelsea	5	2	Plymouth	—	—
Salem	6	1	Weymouth	—	—
Newton	6	1	Framingham	4	1
Haverhill	8	1	Southbridge	3	2
Fitchburg	8	3	Wakefield	—	—
Everett	5	1	Webster	—	—
Taunton	5	1			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 3, 1907.

EAGER, J. M., assistant surgeon-general. Granted leave of absence for one month from July 8, 1907. July 3, 1907.

MCINTOSH, W. P., surgeon. Granted leave of absence for one month and fifteen days from July 25, 1907. June 26, 1907.

STIMPSON, W. G., surgeon. Directed to proceed to Bellingham, Wash., for special temporary duty, upon completion of which to rejoin his station. June 27, 1907.

STIMPSON, W. G., surgeon. Leave of absence granted Surgeon Stimpson for fifteen days amended to read for twelve days only.

FRICK, L. D., passed assistant surgeon. Granted leave of absence for three days from June 22, 1907, under paragraph 191, service regulations.

BILLINGS, W. C., passed assistant surgeon. Granted three days' extension leave of absence. July 1, 1907.

STANSFIELD, H. A., passed assistant surgeon. Relieved from duty at Havana, Cuba, and directed to report at the Bureau in Washington, D. C., July 3, 1907.

SCHERESCHEWSKY, J. W., passed assistant surgeon. Granted leave of absence for one month from Aug. 1, 1907. July 3, 1907.

SALMON, T. W., assistant surgeon. Directed to proceed to Richford, Vt., for special temporary duty, upon completion of which to rejoin his station at Boston. July 2, 1907.

SWEET, E. A., assistant surgeon. Leave of absence granted Assistant Surgeon Sweet for fourteen days amended to read for eight days only.

SIMPSON, FRIENCH, assistant surgeon. Granted leave of absence for seven days from June 22, 1907, under paragraph 191, service regulations.

SAFFORD, M. V., acting assistant surgeon. Directed to proceed to Richford, Vt., for special temporary duty, upon completion of which to rejoin his station at Boston. July 2, 1907.

STEVENSON, J. W., acting assistant surgeon. Granted leave of absence for twenty days from July 5, 1907, and excused without pay for the further period of two months. June 25, 1907.

STODDARD, C. S., acting assistant surgeon. Granted leave of absence for thirty days from May 20, 1907. June 28, 1907.

TARBELL, B. C., acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Tarbell for ten days from April 15, 1907, revoked. Granted leave for thirty days from May 15. July 2, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Richford, Vt., for the examination of an alien immigrant. Detail for the board: Assistant Surgeon T. W. Salmon, chairman; Acting Assistant Surgeon M. V. Safford; Acting Assistant Surgeon J. H. Hamilton, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 20, 1907.

W. A. MCCLURG, medical director. Commissioned medical director from June 16, 1607.

F. W. F. WIEBER, surgeon. Detached from command of naval hospital, Pensacola, and ordered to command the naval hospital, Canacao, P. I., sailing from San Francisco about August 8.

G. H. MCCONNON, assistant surgeon. Resignation accepted to take effect Aug. 1, 1907.

C. G. ALDERMAN, assistant surgeon. Appointed assistant surgeon from July 9, 1907.

R. A. CAMPBELL, acting assistant surgeon. Detached from duty on the Midway Islands and ordered home to wait orders.

F. P. W. HOUGH, L. W. MCGUIRE, acting assistant surgeons. Appointed acting assistant surgeons from July 12, 1907.

M. C. BAKER, assistant surgeon. Appointed assistant surgeon from July 12, 1907.

G. H. MCCONNON, assistant surgeon. Detached from the "Missouri" July 25 and ordered home to wait orders.

A. MCK. JONES, acting assistant surgeon. Orders of June 12 revoked. Detached from the naval recruiting station, Chattanooga, Tenn., and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

H. R. HERMESCH, M. BOLAND, H. L. DOLLARD, E. P. HUFF, H. L. SMITH, W. G. STEADMAN, JR., M. DONELSON, E. E. CURTIS, D. H. CASTO, assistant surgeons. Appointed assistant surgeons from July 12, 1907.

J. D. MILLIGAN, pharmacist. Unexpired portion of sick leave revoked. Ordered to the "Fish Hawk" July 27.

RECENT DEATHS.

DR. SAMUEL WIMPELBERG, of New York, died suddenly in Roosevelt Hospital in that city on July 12. He was graduated from the Jefferson Medical College, Philadelphia, in 1883, and till recently had practised at the Getty House, Yonkers, N. Y.

DR. CHARLES HODGE BOARDMAN, of Brooklyn, N. Y., who was a son of the late Rev. H. H. Boardman, D.D., of Philadelphia, died on July 16.

BOOKS AND PAMPHLETS RECEIVED.

The Delivery of the Lens for the Extraction of Cataract; Irrigation of the Anterior Chamber and the First Toilet of the Wound. By L. Webster Fox, A.M., M.D. Reprint.

High-Frequency Current in Ophthalmic Practice. By L. Webster Fox, A.M., M.D. Reprint.

Treasury Department. Public Health and Marine-Hospital Service of the United States. Hygienic Laboratory. Report on the Origin and Prevalence of Typhoid Fever in the District of Columbia. By M. J. Rosenau, L. L. Lumsden and Joseph H. Kastle. Washington. 1907.

Deutsches Bäderbuch bearbeitet unter Mitwirkung des Kaiserlichen Gesundheitsamtes. Von Dr. F. Himstedt and others. Leipzig: J. J. Weber. 1907.

Hay-Fever, Hay-Asthma, Its Causes, Diagnosis, and Treatment. By William Lloyd. London: Henry J. Glaisher. Chicago: W. T. Keener & Co. 1907.

Practical Fever Nursing. By Edward C. Register, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Report of the Commissioner of Education for the Year ending June 30, 1905. Vol. II. Washington. 1907.

Transactions of the American Dermatological Association at its Thirtieth Annual Meeting held in Cleveland, Ohio, May 31, June 1 and 2, 1906.

Massage, an Occupation for the Blind. By L. Webster Fox, A.M., M.D. Reprint.

The Alkaloids of Ergot. By George Barger, M.A., D.Sc., and Francis Howard Carr, F.I.C. Reprint.

Ergotoxine and Some Other Constituents of Ergot. By George Barger, M.A. (Cantab.), D.Sc. (Lond.), and H. H. Dale, M.A., B.C. (Cantab.) Reprint.

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Address.

THE PAST, PRESENT AND FUTURE OF TUBERCULOSIS.*

BY FREDERICK C. SHATTUCK, M.D., BOSTON

THERE are obvious reasons why the honor of being asked to prepare the Shattuck lecture is peculiarly grateful to me. The terms of the will under which the society has established that lectureship provide that the income of the bequest shall be applied to the "collection and publication annually of historical or other essays on the climate of said Commonwealth, on the diseases of its inhabitants and on such other subjects as the said society or its government may select."

It is just one hundred years since Dr. Shattuck, having taken the degree of M.D. at the University of Pennsylvania, at that time the chief medical school of the country, settled in Boston. His father, Dr. Benjamin Shattuck, was a country practitioner in Templeton, Worcester County, an A.B. of Harvard in 1765, but apparently had no degree of M.D., there being no institution in the country at that time capable of granting it, and his circumstances not permitting him to cross the water to secure it.

His life was arduous and was brought to an end at fifty-three, I believe by tuberculosis. This disease also proved fatal to Dr. George C. Shattuck's first wife, probably to one or more young children, certainly to a daughter of twelve. Of seven children, the eldest alone grew up and married. Families of old New England stock are smaller to-day than formerly; but infant mortality is far less among them, so that the actual decrease in this stock is probably not as great as the smaller number of children would seem to indicate. However this may be, certain it is that the rigorous, changeable climate of New England has long had an evil reputation as being favorable to tubercular disease. This fact, in connection with the loss which consumption inflicted upon Dr. Shattuck's family, his desire to do what he could to make his beloved state healthier and happier, and the prominence which the prevention and cure of tuberculosis has assumed of late years in this community, as well as throughout the world, determined me to choose as my subject for the evening, "The Past, Present and Future of Tuberculosis." The subject may be well worn. It is, however, of vital interest, and I do not feel that I shall wear it out, whatever the effect of my remarks may be upon you.

Tuberculosis is no modern disease, its most frequent form and localization in the lungs — consumption — having been recognized and dreaded alike by the profession and the laity in the remotest times of which we have written record. And yet so universal and constant has been its presence in settled and civilized communities, so steady, sure and apparently unavoidable its ravages, that familiarity, although it did not breed contempt, did breed a certain indifference. Until the most recent times it was regarded as one of the manifestations of the inscrutable will of God, almost inevitably fatal, — a part of the necessary order of nature.

Kismet was on the lips of Christian, Jew and Mohammedan alike with regard to consumption. Thus, although dreaded, it was — and is — far less so than those infections which visit us only from time to time and to whose presence and effects we have thus not become so accustomed.

Hippocrates defined consumption as the disease the most difficult to treat and that which proves fatal to the greatest number.

Isocrates, about 400 B. C., is said to have been the first to write on the transmissibility of consumption by contagion.

Aretæus, about 250 B. C., recommended sea-voyages for consumption.

Two hundred years later Aritæus, the Cappadocian, thus described the appearance of the consumptive: "Voice hoarse, neck slightly bent, nose sharp and tender; cheeks lean, prominent and red; eyes hollow, brilliant and glittering; swollen, pale or livid in the countenance, the slender part of the jaws resting on the teeth as if in smiling, otherwise a cadaverous aspect."

Celsus, early in the first century A. D., advised change of air and outdoor life for phthisis. Let us note in passing that Celsus was a layman who set forth the medical knowledge of his time and of whose encyclopedic writings those on medicine have alone come down to us.

Galen held that phthisis is an infectious process; that there is danger in living with those affected by it. Then came the long, dark night of the Middle Ages when learning, so far from advancing in Europe, fell into a decline, barely kept alive by the monks until the Renaissance. Even the monks, however, devoted themselves to the Latins rather than the Greeks, and were interested in theology and religion, scarcely at all in natural science.

The Arabs, however, revered and tended the lamp of science lighted by the Greeks, and passed it on to the Moors of Spain, and the influx of Byzantine scholars into Italy after the fall of Constantinople greatly stimulated the awakening interest in Greek thought in that peninsula, whence it spread northward.

Avicenna, the Arabian, in the first half of the eleventh century, believed consumption to be one of the diseases which spreads from man to man.

Six hundred years later, Fabricius Acquapendente writes, "Celsus amongst Latins, Paulus Æginetа amongst the Greeks and Albucasis amongst the Arabs form a triumvirate to whom I confess that I am under the greatest obligation."

Montani in 1550 called consumption one of the most contagious and easily contracted of diseases. With the Renaissance came dissection illuminating anatomy and pathology.

Silenius first demonstrated the association between tubercles or nodules in the lungs and phthisis.

Morgagni would not perform an autopsy on one

*The Shattuck Lecture, delivered before the Massachusetts Medical Society, June 11, 1907.

dead of tuberculosis, and was influential in having regulations passed by the municipal authorities to control the disease.

Antonio Cocci in the first half of the eighteenth century advised the use of sputum cups, and urged the whitewashing of all close, small rooms in which a consumptive had lived. If the room was large and sunny less rigorous measures were deemed necessary.

Lazarus Riverius dwelt on the contagiousness of phthisis and notes its spread throughout an entire family by heredity or contact.

Michel Peter, writing about 1600, says, "I know of nothing more hideously fetid than the bedroom of a rich consumptive. It is a spot carefully enclosed where both air and hope are alike forbidden to enter. There are sandbags to doors, sandbags to windows, thick curtains envelope the bed where the unfortunate consumptive swelters in perspiration, and an atmosphere twenty times respired, twenty times contaminated by contact with his own diseased lungs."

The Dauphin of France, only son of Louis XV. and father of Louis XVI., died in 1765 of consumption. About a year later his wife died of undoubted consumption as shown by the autopsy, probably contracted through her devotion to him. About two months before her death Tronchin, the favorite pupil of Boerhaave, the physician and friend of Voltaire, a man who applied common sense to medicine, relying on hygiene rather than on bleeding, purging and puking, was called in. In the palace at Versailles it was the custom to close as tightly as possible all windows from November first (All Saints' Day) to Easter. Tronchin found the air of the room so foul that he ordered the windows opened, exclaiming, "The princess is poisoned." Malice and jealousy perverted the meaning of this remark, which won him the implacable hatred of the Duc de Choiseul. Tronchin was put in charge of the case, fed her generously, insisted on fresh air, made her walk and drive. At first she improved, the fever abated, and she slept without drugs; but the disease was too far advanced, lighted up afresh, and she did not long survive a large hemoptysis. A storm of abuse was heaped upon him by the profession. He was called the "worst of charlatans," and was accused of cutting short the life of his august patient by a treatment "as fantastic as murderous." Tronchin is not as well known as he deserves to be, having published nothing on medicine except a monograph on lead colic, which might have been better done. A memoir of him by a descendant was published in 1906 and should be widely read.

In 1760 a hospital was erected at Olivuzza for the accommodation of phthisical patients. In much more recent times the Italians especially, their country being sought by well-to-do consumptives from Great Britain and America, were accused by us of superstitious cruelty towards these patients, the friends of one who there succumbed to this disease being put to great inconvenience and expense during the last illness and the freshness of their grief.

In 1803 Chateaubriand wrote from Rome to a friend concerning the death from consumption of Madame de Beaumont, "I am in great difficulty. I had hoped to get 2,000 crowns for my carriages, but phthisis is declared in Rome a contagious disease, and as Madame de Beaumont drove two or three times in my carriages, nobody is willing to buy them."

The great Laennec himself succumbed to the disease, the recognition and pathology of which he had done so much to further. There seems no doubt that Goethe also had consumption and finally died of it.

It may be broadly stated that until within fifty years both the public and the medical profession regarded phthisis as incurable. Efforts were practically confined toward making the patient comfortable and prolonging his life, in a small way toward preventing the spread of the disease, seldom toward curing it.

Early in the nineteenth century a French doctor, more hopeful than the rest, wrote, "There are two kinds of consumption: that of the rich which is sometimes, and that of the poor which is never, cured."

It is an interesting fact that the two men who stood at the head of medicine and surgery in this community during my student and early professional life had both been tubercular as young men; but both lived to the due age of the psalmist, and both died of other diseases. I was privileged to hear from the lips of the late Dr. Edward H. Clarke an account of a massive pulmonary hemorrhage he had between Bagdad and Damascus while traveling for the benefit of his health.

Very great importance was attached to hereditary predisposition, and, diagnosis being less prompt and treatment less rational, the outlook for recovery was indeed gloomy.

I well remember in 1874 hearing a French physician, with whom I was making a visit at the Hotel Dieu at Lyons, remark, "*Messieurs, pour la phthisie il n'y a que deux remèdes, l'opium et la menterie.*"

I also heard the late Dr. H. I. Bowditch say that he valued his service at the City Hospital especially for the reason that it helped and strengthened him to see patients get well under his care. You remember that he was the first and leading specialist of his time in Boston in thoracic disease.

Those who could afford to leave home went to Italy, Madeira, Egypt, the Riviera. On this side of the water, Havana, Savannah, Charleston were the main resorts. Dr. John T. Metcalfe during the Civil War gave Nassau vogue, and later started Thomasville, Ga. He was not a consumptive as have been so many physicians identified with this or that place which they found helpful to themselves and made so to others.

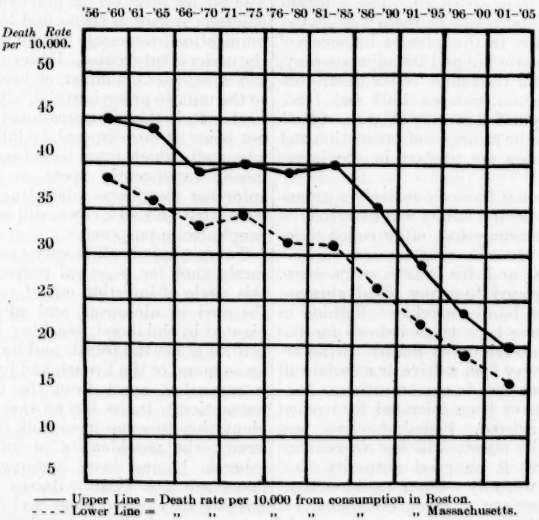
Did time permit it would be interesting to dwell somewhat on the change of view with regard to the essential element of climate for consumption. Warmth and equability to minimize the

risk of taking cold were in the ascendant up to about 1860. Then the equable though cold winter climate of Minnesota came into some vogue. Then equability fell from grace, and altitude combined with dryness and sunshine took the first place, especially for incipient cases. We now realize that climatic change, though in some cases very desirable, is not a *sine qua non* of cure.

Bowditch and Buchanan simultaneously and independently called attention to the relation of soil moisture to the prevalence of consumption, a relation now not much credited.

Some individuals were saved; some had their lives prolonged, yet the general hopelessness of the disease was admitted, though the post-mortem evidence of puckered and scarred apices had long been known but had failed to teach its full lesson.

CHART SHOWING DECREASE IN DEATHS FROM CONSUMPTION IN MASSACHUSETTS AND IN BOSTON.



It seems to me that ignorance of the pathology of tuberculosis was largely responsible for failure to advance at the clinical end. Laennec upheld the unity of tuberculosis; but the microscope led men astray at first, inducing them to confuse distinctions with differences. We had the desquamative pneumonia of Buhl, the catarrhal pneumonia of Niemeyer, and the dictum of the latter that the greatest danger of the catarrhal pneumonic, that is, consumptive, is that he become tubercular. We thus wandered in a maze of theory, based on observation it is true, but still theory, for years after Villemin in 1865 proved that the advocates of the infectiousness of tuberculosis were right, and made a step toward establishing the true criterion by which tuberculosis is to be recognized. For clinching knowledge as to this criterion we had to wait then nearly twenty years for Robert Koch and his masterly proof that a special bacillus is the sole cause of tuberculosis, and the indispensable factor in the production of all the multiform changes we had classed as consumption, lupus, scrofula, white swelling, hip and spine disease, etc.

The year 1882 marked a great era in medicine and may be regarded as dividing the past from the present of tuberculosis. We then for the first time began to see clearly, having found the cause, what we had to combat, and could begin to plan the intelligent campaign in which the civilized world is now engaged. The individual who was willing, bravely and cheerfully, to follow the directions of a wise physician and could also afford to do so, had a good chance fifty years ago, though in two respects particularly his chance has improved. His disease is recognized earlier, — a great thing in itself,— and his facilities for securing the prime *desiderata* for recovery are more varied and better.

A sharp contrast between the past and the present of tuberculosis lies in that good hope for recovery is extended from the exceptional to the average individual; in that we recognize and can minimize the danger of the spread of infection; in that knowing the cause of the disease and its mode of infection, by intelligent and concerted action we can prevent as well as cure. We knew that general hygiene was of the utmost value in the prevention and cure of tuberculosis just as we knew that stagnant water and defective drainage stood in some causative relation to malaria. The

discovery that an infected mosquito is the necessary link in the chain of causation of malaria enables us to act intelligently and efficiently, instead of gropingly and inefficiently, along preventive lines, our cure of the disease in the infected man being practically no better than it was before Laveran discovered the plasmodium malariæ.

Let us not forget that a tent on the roof, a shed open to the sun and fresh air in the backyard of a city house, camp-life in the woods, are not "all that there is of the most modern," as the French say.

As appears clearly in charted form, mortality from consumption was dropping gradually in this state from 1855 to 1885, since when the drop has been more steady and somewhat more rapid. It is interesting to compare the mortality in Boston with that in the state. From 1855 to 1865 it fell from 45 to 40 per ten thousand; then was stationary for twenty years, and since 1885 has steadily dropped from 40 to 20. The constant influx of immigrants, many of them vulnerable, and their subjection to the adverse influence of urban tenement-house life and its adjuncts may, perhaps, account for the failure of the death-rate to decrease in Boston between 1865 and 1885, while the more rapid fall in mortality since 1885 may well be due to the measures of prevention and cure which are more apt to start in the larger centers.

It is safe to say that formerly scarcely a prominent and wealthy Boston family was free from its case or cases of consumption, often called "decline."

A century ago, and for many years after, women were subjected to many disadvantages. Robust health was hardly ladylike. Fashion in custom and in dress kept them indoors far too much. Outdoor exercise was limited to horseback riding for a very few, a drive or a social call at short distance on foot in good weather. Athletics would not have been tolerated for women even if they had existed. Female footwear was not adapted to the street, still less to country roads, and I have it on good authority that drawers were not worn by women until less than one hundred years ago, it being considered indelicate to clothe that part of the person so nearly after the manner of men. One of the numerous daughters of a wealthy merchant, all of whom long held out against the introduction of drawers for women, was remonstrated with by one of her friends who remarked, "But suppose you should fall down in the street," to which she replied, "A *lady* does not fall down in the street." It is not in flippancy of spirit that I mention these facts. They seem to me to throw an interesting sidelight on the times, and to give a hint as to why practically none of the descendants of those families die of consumption at present. Now and then one gets the disease, but it is promptly recognized and almost invariably cured. It is, however, time to leave the past and to let the dead bury their dead.

Strengthened by and relying on modern knowledge, we are now engaged (I), in the prevention of tuberculosis in all its forms, and (II), the cure and care of those now infected by it.

I. As already stated, it is in prophylaxis especially that we have gained by Koch's discovery. A few words must therefore be said on the mode of infection. The seed is the bacillus of tuberculosis; it is virtually omnipresent in civilized and settled communities; it succumbs readily to sunshine. How long it may retain its vitality in houses, fabrics, etc., we do not know, perhaps not as long as is often and by many believed. Theobald Smith tells me he cannot keep a culture alive more than three months even under conditions most favorable to the longevity of the organism. To his published work and ready kindness in imparting his knowledge I may here express my indebtedness. We are all his debtors. The bacilli of human and bovine tuberculosis are separate organisms to-day even if they may have had long ago a common ancestor. The bovine form occurs practically only in young children, is rare in them, and the risk of its communication from cattle to man is very small unless the udder is tubercular. Under no other condition can a sufficient number of bacilli gain entrance to the milk to prove harmful. The meat is safe as food. It is therefore irrational, unlimited funds not being at our disposal, to kill all cattle, otherwise well, which react to tuberculin. Much less money intelligently spent in dairy inspection, enforcing cleanliness, detecting and eliminating emaciated and sick cows, will serve all necessary prophylactic purposes.

Tuberculosis itself is very rarely congenital, so rarely that for practical purposes we can leave this mode of infection out of account. Whether the seed of adolescent and adult tuberculosis is planted in childhood, reaching the blood stream and lungs *via* the tonsils and intestines, as is held by so many of the French and by Behring, or not, is somewhat apart from the broadest view of prevention. In so far as they believe the implantation to come from milk they are probably wrong, the non-identity of human and bovine tubercle having been apparently proved. All floors are not clean. Babies in crawling and walking are close to them, and like dogs they are not over particular as to what they put in their mouths. The seed lives in man and must be able to get from one man to another, to change its dwelling, in order to persist. Its vehicle is the sputum in the vast majority of cases. It is therefore by efforts tending to prevent the preservation and diffusion of the sputum of those affected that we can most simply and efficiently limit the supply of seed, which furnishes such a rich harvest to the Great Reaper. It is fortunate that a remedy which must be generally applied is so simple, — really within the reach of the lowest intelligence and the most slender purse. The community as a whole is rapidly learning its interest in the care of sputum. The individual is, probably less rapidly, awakening to his duty, first, as a member of a family; second, of the community. We must continue to diffuse this

knowledge and to enforce, as fast and far as we can, action in accordance with it.

The only way to absolutely eradicate tuberculosis lies in total destruction of the seed, a conceivable rather than an attainable possibility. It is notoriously a seed which flourishes on poor soil. Whether poor from the start — congenitally poor — run out in one or more of a thousand ways, or both together, matters little for practical purposes, save that the children of families with a strong tuberculous taint must be tended with extra care and wisdom. Therefore an important part of prophylaxis is to so enrich the soil, that is, to so increase the resistance of every member of the community, that such seeds as may gain lodgement will die without issue, or, at all events, without extension. Thus everything which tends to improve public health is helpful — cleanliness; good and sufficient food, well prepared; pure and ample water supplies; public parks and baths; children's playgrounds; legal restraints upon the greed and stimulation to the inertia which neglects the hygiene of tenements, workshops and factories; cultivation of a taste and provision for the means of outdoor exercise and recreation. These are far from being all, though they are among the most important agencies uplifting the public health. It is to them that the decreasing mortality from consumption up to 1885 is to be exclusively credited. Nothing like an accurate apportionment can be made of the relative value of seed destruction and soil enrichment since that date. Seed destruction is a new factor within twenty years; but during this same period we have seen ever-increasing attention to hygiene in all its branches, especially on the part of the state and the municipalities. The golf course and tennis courts in Franklin Park, the ocean pier at South Boston, public baths, the medical inspection of school children — imperfect as it is at present — these are straws which show the way the wind blows. Straws they are too in another sense, threatening to break the back of that patient camel, the city tax-payer, burdened with an extravagance — or worse — of expenditure, which no private business could or would tolerate. Quick transit tends to diminish the density of urban population. Corporations, partly under the pressure of public opinion and legal enactment, but also from the mingled motives of justice and self-interest, improve the conditions of their employees. Public-spirited and benevolent citizens are forming new organizations, and are also as individuals helping along the work. All indications point to great vitality in these influences making for the public weal. Individualism, the saving grace of fifty years ago, has been weighed in the balance and found wanting. Its antithesis, socialism, is advocated by some and feared by others, though the soil of the United States is probably less fitted for it than any other on the globe. The legal maxim, *caveat emptor*, is confronted by pure food and other laws limiting the freedom of the individual for the greater good of the community. The individual must be ready to forego privileges, some of them perhaps innocent as far as he alone is concerned. President Eliot well said in a recent address that it is in co-operation that we can attain the best results, and nowhere will co-operation enriched with public spirit yield a richer harvest than in, wisely and along broad lines, striving to prevent tuberculosis.

Among prophylactic measures, those of which Grancher may be regarded as the parent in France must be mentioned. In that country the belief is widely held by physicians that tuberculosis is usually contracted in infancy and childhood, even if it does not develop until adult life. Grancher and his wife started the movement to remove the children of tuberculous parents with their consent to country houses or sanatoria until the children are strong enough to resist the disease. It is claimed that 50% of those children are cured. There are only two such sanatoria on our greatly extended seacoast. Children with enlarged glands — tubercular — and those debilitated from any cause,— pre- or potentially tubercular — are followed up to their homes and either removed to "*écoles de plein air*" or built up at home by generous diet and instruction of the parents in general hygiene. It has been found far better to enlist the interest and intelligent co-operation of parents in better feeding than to furnish milk and eggs and the like at school. This work is growing rapidly and is in private hands, not, as is usually the case on the Continent, under governmental control or pay.

The proposed extension of medical inspection of the Boston school children and a detail of nurses to visit and teach the families could render great service along these lines, and may, it is hoped, spread widely and rapidly.

II. We now pass on to a brief consideration of the measures at present under trial for the cure and care of those not only infected but diseased. As Theobald Smith keenly observes, infection and disease are not quite one and the same thing. A person may be infected — harbor the bacilli of tuberculosis perhaps indefinitely — and yet remain perfectly well. He is not diseased, strictly speaking, until the infection spreads locally or generally.

Perhaps clearness may be promoted by the rough separation of the advanced and the early cases. I say rough advisedly, inasmuch as the best means to combat tuberculosis is a new subject, experimental, somewhat chaotic, rapidly developing. The leading principles are fairly clear; but we are to learn how to apply them to existing conditions in a decentralized country composed of forty odd sovereign states, presenting often wide divergencies in climate, industries and other important respects, not only between but also within each other.

Measures desirable in and applicable to Germany, for instance, may be entirely out of place in this country. It is in some regards easier to classify for the future than for the present.

Cure can be expected in very few of the advanced cases. In such we may aim at pro-

longation of life, promotion of comfort and the safety of others.

In the well-to-do the disease is usually recognized early and pretty well cared for at the present time. Among cleanly people with reasonably spacious, sunny and airy quarters, the risk of the spread of infection is very small. This appears clearly from the experience of the older hospitals and sanatoria for consumptives in Germany, England and this country. In such hospitals it is not common for attendants to acquire the disease, though Dr. James Minot tells me that six nurses have developed consumption at the Long Island Hospital since 1896. They all entered the training school with a physician's certificate of good health. He does not know whether or not they were examined soon after their arrival upon the Island. City politics are killing to body and soul alike.

Dr. Nichols, however, writes me that during the fifteen years he has been connected with the State Hospital at Tewksbury, one physician can reasonably, and two officers possibly, be supposed to have contracted the disease there. He also states that he has never had any evidence of the spread of the disease from one patient in the institution to another; and yet during the first half of this period segregation of consumptives was very incomplete, and those exposed, being paupers, were presumably not up to the average standard of resistance. Those who wish so to do can contrast here Boston and the state.

In the House of the Good Samaritan for over fifty years half the adult inmates have been consumptives, generally advanced cases, and no attempt at segregation was made until removal to the new building two years ago. During this half century, among all employees one nurse alone contracted the disease within the walls as far as is known. A good illustration of what can be done even under very unfavorable conditions is afforded by the so-called " lung block " in New York. It is in the most congested and crowded district in the world, the ward containing it averaging 78 human beings to the acre. This block alone holds nearly 4,000 people, of whom some 400 are babies. It is closely packed with huge grimy tenements which are honeycombed with rooms. Light and air have been slowly shut out to make more rooms. Walls, courts and air-shafts are cramped, deep and sunless. The body of the block is packed with Jews, Irish and Italians, with a sprinkling of twelve other nationalities. Owing to the comparative immunity to tuberculosis among the Jews there are relatively few cases of consumption in this block in their race. One house, called the " Ink Pot," has front and rear tenements five floors high with a foul, narrow court between. Here live 140 people of whom 23 are babies, and here the plague thrives in darkness and filth, — filth in the halls, over walls and floors, in sinks and closets. On the ground floor in one corner where there is apparently little sun and light lives a German family who have kept their windows opened and their rooms well-aired and spotlessly clean. They alone have escaped the disease. Practically every other tenement in the block has had its case of consumption.

It is of the utmost practical importance that the public should clearly understand that while tuberculosis is infectious its infectivity is slight, provided that simple precautions are taken.

Advanced cases, among those who, though not well-to-do, can still provide for themselves reasonably well and therefore usually stay at home, are a very important class to find, educate and follow up to see that they and those with whom they live practise what they are taught. Advanced cases among the very poor, who require so much personal attention, to say nothing of such food and hygiene as their families and friends cannot provide, are best cared for in hospitals, public and private.

At the State Hospital at Tewksbury, Dr. Nichols writes me under date of March 25, there are 247 cases of tuberculosis. In a special building and neighboring camps and shacks, half a mile from the main hospital, 160 men are cared for; but the cases have been sent in such numbers this winter that it has been necessary to put about 30 men in the earlier stages of the disease in the regular hospital wards. Dr. Nichols is asking the legislature for an addition for fifty patients to this building, merely to meet present and urgent demands. A building for female consumptives, also more than half a mile from the main buildings, will be ready for patients this spring. This is the only public state provision at the present time in Massachusetts confessedly for advanced cases; and to enhance its usefulness, the legislature a year ago so changed the law as to allow its benefits to consumptives without thus making them legal paupers. The Boston Hospital for advanced cases will be opened before long. There are a few private institutions solely for advanced consumption. There are others which receive such cases in common with other more or less incurable chronic diseases. The present provision is quite inadequate. It is true that less than one-third of the cases at the Rutland Hospital belong to the incipient class. Although it was for that class that the hospital was designed, not enough incipient cases apply to fill the beds, and more advanced cases are therefore taken. For this state of affairs the resident physician blames the medical profession in that it too often fails to make an early diagnosis. This blame is probably in the main deserved, though we all see patients who seek no medical advice until they have passed well beyond the incipient stage. The number of these cases will doubtless steadily diminish in the near future.

The present provision for less advanced and early cases in this state may be classed under:

1. Sanatoria.
2. Dispensaries.
3. Day camps.
4. Tuberculosis classes.

The sanatorium treatment dates back to 1854, Brehmer, of Goebersdorf, succeeding where Bodington had failed. The latter should be accorded

the tardy credit which he did not receive during his life. In 1840 he, " an obscure country practitioner of Warwickshire," published an essay on " The Cure of Pulmonary Consumption on Principles Natural, Rational and Successful," based on the case of a young girl whose faith in him prevailed against the most strenuous opposition of her people and who passed her days, even in winter, out of doors on donkeyback. Although at first her cough was worse, she persevered, recovered, and lived to be eighty-one years of age. He built an institution within which to carry out his ideas, but could not hold out against universal opposition and transformed it into an insane asylum where later he died — a tragic story. Time does not permit even a brief history of the sanatorium movement, but I cannot forbear to mention Dettweiler, Trudeau and Vincent Bowditch. The first sanatoria were private, and our state took the lead in public provision for early cases at Rutland. It will not be many years before every state has one or more such centers, the movement now spreading to cities and towns.

It is natural that provision should be first made for early, presumably curable, cases. " What can't be cured must be endured." We like to see prompt results. The educative value of sanatoria for incipient cases is at present great. Every inmate learns what the effective weapons are for fighting his disease and how to use them. After his discharge this knowledge filters more or less clearly through him to others who stay at home, and also teaches him, and through him others, how to live without risk to the well. We already see, however, indications of a spreading belief that the greater need is for hospitals to receive advanced cases with disabling and incurable disease, and whose circumstances are such that they cannot at home receive the care which ordinary humanity demands, or be safe companions for the healthy. The State[1] Commission on Tuberculosis has just recommended the legislature to establish three hospitals in different parts of the commonwealth for such cases. It does not advise any more provision for early cases. Institution life at best has serious disadvantages, particularly for those but partially or slightly disabled. Such degree of productive or useful occupation as strength permits is conducive to health. This is difficult to secure in connection with sanatorium life, and it has been suggested that some kind of farm work be an adjunct to Rutland for those who are fit.

This can only be carried out during a limited part of the year. An objection common to health resorts and sanatoria alike, whether for the rich or poor, lies in the congregation of considerable numbers of persons suffering from the same disease, and in tendencies to a mental state resulting therefrom. The person who stays at such a place longer than his disease and circumstances in a large sense really demand from that moment gets harm physical, mental or both. Here, as everywhere in medicine, we must individualize as far as we can, and we can often do so farther than seems possible if we will only compel ourselves to the hard work of thinking.

Such luxurious provision as is made in some of the German institutions is neither necessary nor desirable. It is sheer extravagance begotten of too much money, analogous to that of some of our life insurance companies which have been so cussed and discussed of late. Just as we have begun to see that climate is only an indirect means for the treatment of cases of tuberculosis; that there is no part of the world where the disease does not exist if favorable conditions are present or are introduced, great advance is made in home treatment, which must and should be the only treatment for the great majority of cases.

This brings us to the tubercular dispensary of which Philip, of Edinboro, was the founder in 1887. The Royal Victoria Dispensary was not only the first of its kind but is so complete to-day as to serve as a model.

The Edinboro organization aims to provide:

(1) A place where poor patients can be examined;

(2) Where bacteriological examinations can be made;

(3) For instruction of patients;

(4) Dispensary for drugs, disinfectants, food, etc.;

(5) Visits in homes of patients by
  (*a*) doctors;
  (*b*) nurses;

(6) Means for the selection of early cases for sanatoria and late cases for hospitals;

(7) For the general guidance of patients and their friends, to answer inquiries from all interested persons on every question concerning tuberculosis.

There are four doctors (one is paid $300 a year), a trained nurse, a volunteer Samaritan Committee of ladies who look after school children and families of patients. There is a paid employee on the premises who helps take histories, etc. The dispensary costs $2,500 a year. Interest has been awakened in other cities and towns. There is now a sanatorium for early and a hospital for advanced cases. To complete every such organization there should be colonies — or some means of keeping track of the after life of arrested or cured cases, and of getting them proper employment, etc.

Calmette at Lille in 1900 opened the Emile Roux Antituberculosis Dispensary. His idea has been taken up in Germany especially by Van Pütter and Kayserling, where numerous cities have opened so-called " Fürsorge-stellen," " Care and Advice Stations." Here instruction is given to patients who must live at home; sputum examinations are made, food and medicine are given when necessary, and visits are made in the homes of the patients themselves. In Boston in 1899 at the Boston Dispensary this idea was adopted. The Phipps Institution, opened in Philadelphia in 1903 through the generosity of Henry Phipps and under the guidance of Lau-

[1] Since this was written the legislature has adopted the recommendations of the commission and the Governor has appointed a commission to build these hospitals. State sanitary inspectors have also been appointed.

rence Flick, does this on a more thorough scale than almost anywhere else. In New York the Department of Health Clinic for the Treatment of Communicable Pulmonary Diseases, established in 1903, is the best example of such work under municipal authority.

Recently in Boston the system of tuberculosis classes has been introduced, and thanks to the enthusiasm and devotion of Drs. J. H. Pratt and J. B. Hawes, 2d, and Cleaveland Floyd, is bearing most promising fruit. This gives a large amount of care to a small number of patients, the reverse of what is done in most dispensaries. The "class" is a unit which can be indefinitely increased. Five such classes have been formed in Boston, two in New York, and one each in Cambridge, Providence, Brockton, Lynn and Baltimore.

Philip, of Edinboro, and Calmette, of Lille, are the two great names in dispensary work. Calmette's are called Preventoriums. Besides giving milk, eggs, etc., to poor patients, in some instances the rent is paid, it being considered a good investment.

Day camps originated in Berlin — "Walderholungsstätte," founded by Dr. Becher. Insurance companies pay for the food, and railroads give special rates to and from the camps, two cents for eight miles. These camps are for patients too advanced for sanatoria or who for some reason or other must live at home. There are two such in Boston, the only two in America. Berlin has three, the only ones in Europe.

The weapon against tuberculosis is education: education as to how it is spread, how prevented; how treated for cure and alleviation, and for safeguarding the community. The campaign is on. Earnest, devoted leaders have come forth from the profession, working with small thought of money return. The public is ready to help, to co-operate with brains, time, money, service. Are we doctors as a body doing our full share? I doubt it. Too many of us, I fear — I myself cannot plead not guilty — are more or less afflicted with inertia, congenital or acquired. There is a large supply of enthusiasm everywhere among the laity, which only needs the direction of physicians to bring new land under cultivation as well as to increase the yield of that already planted.

We cannot realize too strongly that everything which tends to elevate the public health, directly or indirectly, makes the struggle for existence of the tubercle bacillus harder. At one or another place in the world almost every necessary specific step for prevention or cure is taken. One place or country has given special attention to one branch of the work and gone far in it; another to another branch. Some places have done little; too many nothing. The work of the immediate future, therefore, would seem to lie in generalizing and systematizing the work in conformity with the varying modes of government and administration of each country and independent state, with due consideration of its customs, conditions, industries, etc. Modification of details must be made to meet the different demands of large cities, the factory town, the village and rural community. Just as good results can be secured where local self-government prevails as under a centralized and paternal system; but people must be made to see their importance and to desire them, securing proper legislation and ordinances, and providing means for the enforcement of the same. In our own state, the work for the immediate future would seem to lie in:

1. The passage of a general law making the reporting of consumption compulsory. But no such law can be thoroughly efficient unless the medical profession as a whole is competent to make an early diagnosis, and is in such sympathy with the law that the physician puts obedience to it and its underlying principle above the selfish preference of this or that patient and above any fear that he may lose practice by reporting him. It is not likely that such opposition will be very serious or long-lived.

2. Laws providing for the disinfection of dwellings occupied by the consumptive after moving or death.

3. An extension of the anti-spitting law, so as to include at least factories, mills, schools and the halls of tenement houses.

4. Legislative provision for state medical inspectors, responsible to the State Board of Health, each in charge of a district within which he supervises organized work.

5. Each community in the organization should have such force of nurses, visitors, or both as each may need; that the poor may be followed up in their homes, taught what to do, helped to do it, if necessary, and encouraged to persevere in doing it. Much of this can be done without, or with trifling, expense. There is much intelligent energy running to waste which can be turned in this direction.

All the above recommendations are made by the State Commission to investigate measures for the relief of consumption. Their report should be read and pondered by every physician.

Immense service can be rendered by arousing the interest of private and incorporated employers of labor in mills and factories. When the example set by the A. L. Joslin Company in this state and by the Sharpe and Brown Company and Mr. Metcalf in Providence at the instigation of Drs. E. P. Joslin and Fulton is generally followed, the mortality returns will tell the story, and there is no reason why it should not be followed if we physicians do our duty. Mill owners and managers are as a class intelligent and humane. Let their physicians call attention to this matter. It is highly probable that there will be no economic loss to the employer. There is more likely to be a gain to him, and the gain to individual workers, as well as the community, is sure to be great.

The tuberculosis exhibitions which have been held are potent aids in teaching the public the possibilities of prevention and cure. Such exhibitions should be brought within reach of the great majority of the inhabitants of the state. While the campaign is primarily against tuberculosis, success in its prosecution must indirectly diminish the liability to, or serious effects of,

many other diseases more or less intimately dependent on impaired vitality.

Past experience proves that the mortality from tuberculosis can be greatly reduced. There are those who go so far as to say that a systematic and energetic fight will render tuberculosis as rare as leprosy. Unless a vaccine comparable to that for smallpox, or some other means producing artificial immunity, can be discovered and universally applied, the above view would seem too sanguine. The problem of leprosy was a relatively simple one. That disease is far more difficult to transmit from one individual to another than is tuberculosis. Its lesions are mainly external and it is thus more easily recognized. The segregation of leprosy carried out during the Middle Ages could thus yield results hardly to be hoped for in the case of tuberculosis, an adverse factor in the attempt to stamp out which lies in that, unlike most of the more acute infections, it can be carried and perpetuated by a number of domesticated animals — cats, dogs, rabbits. The tubercle bacillus is being put on the defensive and we can be sure will fight for his life just as we are fighting for ours. Is it not possible that more resistant and virulent strains may develop, if not wholly, at all events partly, in proportion as we develop immunity? That nature is very careful of the species while seemingly regardless of the individual is as true of a bacillus as of larger organisms. Man has totally exterminated the great auk. The Labrador duck has utterly disappeared since 1860 without any assignable cause. The bison and the wild pigeon have practically disappeared. Animals which breed slowly, are defenseless, and, like the bison, require vast tracts of land coveted by civilized man, are handicapped in the struggle for existence. I am told that the few herds of bison which are preserved only just about hold their own, showing very slight, if any, tendency to increase. The balance of nature is very complex and may be very delicate. It does not seem probable that the disappearance of the wild pigeon, such enormous flocks of which still existed easily within the memory of many of us, can be attributed save in subordinate part to their slaughter by man. The part played by man in the extinction of the bison is probably larger than in the case of the pigeon. The preserved herds of bison are well cared for but can no longer migrate. Why do not they increase under protection as do moose and the white-tailed deer? Is it not possible that these beings had about reached their limit of adjustment to external conditions and that any slight change in the balance against them was too much for them? Our lives, and even the written records of man, are so short, and it is so hard for us, busy with our daily struggles, to project our thought and imagination far enough backward or forward. Man himself is a mere babe in arms in comparison with life on this planet, and his parasites in their present form must be younger still. The destructive moths which have caused so much trouble in these parts of late years find no adequate natural enemies in this country. In Europe they ordinarily are kept within bounds, but even there they now and then get ahead of their enemies for a time by reason of some change in the balance.

This line of thought may not be practical. It certainly does not materially influence action now or in the immediate future, but is seems to me deeply interesting and wholly pertinent to our subject of the evening. There is no tendency to race suicide in the tubercle bacillus. He finds an acceptable *habitat* in man, whose numbers are increasing and whose tendency in civilized countries to form large communities runs directly counter to some of the measures which he takes to protect himself against the bacillus. We know that we are decreasing and can further diminish the mortality of tuberculosis. Can we correspondingly decrease the morbidity? I doubt it. Tuberculosis seems likely to persist for a long time to come, perhaps indefinitely, in latent, more superficial, milder and more chronic forms. There can be no question that there are many persons — in all probability there are some such in this very room — who have or have had tuberculosis, even of the lungs, and who tolerate or have recovered from it without knowing that they have or have had it. Here again comes in the distinction of Theobald Smith between infection and disease. It is mainly to his suggestion that I owe the above line of thought.

If the master-word in medicine is work, that in the tuberculosis fight is education. Every teacher knows this to involve work — hard work. To paraphrase Talleyrand's definition of the main requirement of the diplomatist we can say, "*De l'éducation, encore de l'éducation, toujours de l'éducation.*"

The effort to compress so large a subject into reasonable limits has not been an altogether easy one. I trust that my sins of omission and commission may not be as obvious to you as they are to me.

Original Articles.

THE DAILY CARE OF CONSUMPTIVES AT A GENERAL HOSPITAL AS AN AID TO SOLVING LOCAL TUBERCULOSIS PROBLEMS.*

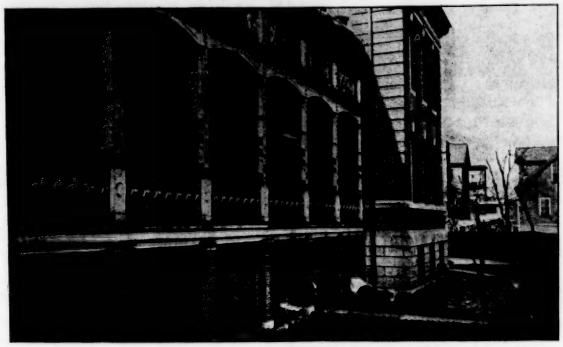
BY ARTHUR K. STONE, M.D., AND CLEAVELAND FLOYD, M.D., BOSTON.

In January, 1905, Dr. E. P. Joslin and myself, in our annual report, made the following recommendation to the Board of Managers of the House of the Good Samaritan who were expecting in the near future to build a new hospital building:

"It is hoped that means will be found whereby women and children will be encouraged to come to the House of the Good Samaritan and spend the day in the open air, receiving a mid-day meal, encouragement and advice, and return to their homes late in the afternoon in time to prepare the evening meal."

At this time neither Dr. Joslin nor myself had any knowledge of a somewhat similar experiment

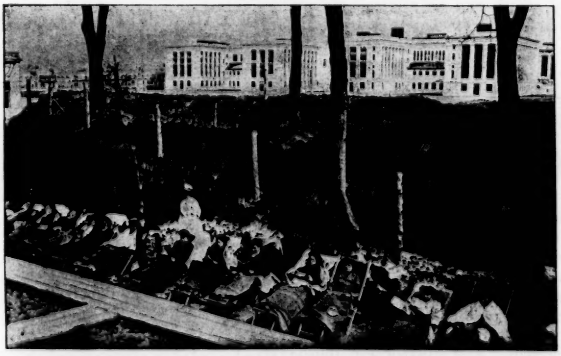
*Read at the meeting of the American Climatological Association in Washington, May, 1907.



Protection from the high winds.



The Camp in winter.



The Camp from the Samaritan Hospital. Harvard Medical School Buildings in the background.

being tried in the day camps for tuberculosis in Berlin. From long experience in out-patient work at the Massachusetts General Hospital and the Boston City Hospital, we had become dissatisfied with the inadequacy of such treatment as could be offered many ambulatory patients, and I had already urged upon the administration of the Massachusetts General Hospital the development of a roof garden, that should be conducted along lines similar to those outlined above. As yet the necessary funds to carry out these plans have not been forthcoming.

May, 1906, the managers of the House of the Good Samaritan undertook the experiment suggested in the above recommendation and appointed Dr. Cleaveland Floyd to have charge of the out-patients under the direction of the medical staff. It is the story of the year's work at the House of the Good Samaritan which I wish to present to you.

Before beginning upon the detail of the work I will say a word as to the hospital. The House of the Good Samaritan is an endowed institution, managed by a board of trustees, who are largely made up of the personal friends and relatives of the founder, Miss Anne S. Robbins, who devoted her long life to the management of the institution, living and dying within its walls. Her example and enthusiasm are shared by those who now carry on the work. The new building is the first of the group of hospitals which will eventually surround the beautiful new buildings of the Harvard Medical School. There is about an acre of land around the House of the Good Samaritan. The hospital was open to patients more than a year before the opening of the new medical school buildings, and daily clinics were held there. There are accommodations for about 43 patients. Twelve beds are devoted to children's orthopedic cases. The remainder of the beds are divided between cases of advanced phthisis and general chronic conditions. The House of the Good Samaritan is in no sense a " home " but a hospital for the treatment of chronic disorders. The members of the medical staff make daily visits. There is a teaching laboratory and a graduate house-officer in attendance, a Baruch hydrotherapeutic apparatus is in process of installation, and the solarium and balconies provide an abundance of fresh air.

The wards for the tuberculous patients and the non-tuberculous are separated from each other by single rooms, dining-rooms, bathrooms, etc., so that there is no contact between the two groups. Those who are able, however, eat in the same room, but at different tables and have china of different colors. The china of the tuberculous patients is cleansed and sterilized by boiling in an entirely separate room from the general serving-room where the dishes of the non-tuberculous patients are washed.

In passing I may add that, so far as is known, during over forty-six years of the hospital's history, but a single case of tuberculosis has been acquired by any of the hospital staff; many of the servants have been with the institution over twenty years, and a number of matrons and nurses ten to fifteen years.

The active attention to the care and treatment of advanced cases yields as great satisfaction as do the cases reported by Dr. Bonney last year. Cases are arrested and all traces of bacilli disappear; some improve so much that the State Sanatorium at Rutland is ready to receive them, and others go to pleasant country surroundings among friends. Even those who do not recover, nevertheless amply repay the care that is bestowed upon them by the way in which they respond to treatment, so that their last days are days of comparative comfort.

The nurses employed in the wards are all graduate nurses. They are under the direction of the superintendent and her assistant, both graduates of the Boston City Hospital Training School. There are, including two night nurses, ten nurses to look after the patients and the operating room, etc., the expense for salaries and wages alone being $7,479.48 a year.

The heat, light and power are furnished by the power plant of the Harvard Medical School, which is designed to furnish similar service to all the other hospitals and buildings which shall be attracted toward this medical center.

The expense of running the hospital amounted last year to $10.79 per week for each patient, which is, of course, a large sum, as the care for such cases is usually computed; but considering the care and attention and food that the patients receive, the cost is very moderate indeed.

After the new hospital had been in satisfactory running order for the space of six months the medical staff renewed their suggestion that an " out-patient " department should be started. They now had the experience that had been acquired by the successful operation during the previous summer of the day camp conducted by the Boston Society for the Relief and Control of Tuberculosis. It seemed to Dr. Joslin and myself that the expensive plant which was in fine running order could extend its sphere of usefulness greatly at a very small additional cost. The managers generously agreed to try the experiment, even though it necessitated some alterations in the new building to arrange for a dining-room for the out-patients and a separate sink at which their dishes could be washed.

A portable house was purchased which was put up on the south side of the main building and away from the street. This is screened thoroughly on three sides and can be used if the mosquitoes are too thick for comfort or in case of a sudden shower or hard storm. But for the most part it serves as a store-house for chairs and blankets, books and clothes, rather than as a sitting-room. In the stormy days of winter, in case of disagreeable winds, the patients sit upon a cement platform beneath the balcony of the main building, where they are protected on three sides from the weather but having fresh air and sunshine from the open southern exposure. Here there is room for 25 steamer chairs in a row. Whenever

the weather is at all suitable, however, the patients bring their chairs into the open and away from the buildings. During the hot days of the summer the patients move to the eastern end of the building for the sake of the shade. Harvard College has also kindly given the use of some unoccupied ground immediately behind the main building of the hospital on which there are some trees. This is very helpful, as in the summer there is an uneasiness among the patients caused by the heat that can only be alleviated by the possibility of a change in location. In the colder months the patients are contented to stay perfectly quiet in their chairs.

In May, 1906, Dr. Floyd started his day camp limited in numbers to 10 patients. The managers soon allowed him to increase his number to 15, and finding that the expense was not going to be overwhelming, in August allowed him to increase to 25. This is practically the whole number that can be accommodated on the grounds and in the dining-room or can be cared for effectively by a single nurse. It will be seen that by August, 1906, the capacity of the hospital for good had been increased over 60%, as we shall see later, at a very small additional cost.

The regimen of the patients is as follows:

At about 9 A.M. they begin to assemble, coming from their homes in electric cars if they do not live within short walking distance. The nurse is on hand to receive them and hear the report of the night and of affairs at home. She takes and records their temperatures, and helps them, if necessary, with their chairs, wraps, etc. A little after 10 o'clock they go to their dining-room where they have all the bread and milk they can eat, and in many instances it is fully 30 to 40 oz. of milk and several slices of bread. Eggs are added to this lunch in less rather than in greater amount according to the time of year and their expense. They then return to their chairs and remain quietly until 12.30, when they re-assemble for their dinner, which is the regular house dinner, meat or fish, potatoes and another vegetable, and some light pudding, with milk and bread and butter. In some cases an ounce of cotton seed or olive oil is added. For some reason or other the patients cannot be made to enthuse over cotton-seed oil, which others seem to have no trouble in administering to their patients.

Again the patients return to their wraps and chairs or the grass and shade of the trees. Two hours after dinner is a quiet time and no talking is allowed so that any may sleep that wish to do so. At 4 P.M. they are again assembled for another lunch of bread and butter and milk, and between five and six, according to the time of year, they return to their homes.

It is expected that all the patients, in addition to the food received at the hospital, have a breakfast and supper at home, and for the most part this is done; some, however, we fear, get very little besides what they receive from us.

The nurse is on duty all through the day and oversees the patients at their meals, takes note of those who are not eating well — and later interviews such to see what is the cause. It is part of her business to gain the confidence of the patients, so that they will tell her of their home worries, of their financial difficulties, about their husbands, children or lovers, as the case may be. At the weighing time, which comes for each patient once a week, the nurse is able to inspect the garments of the patients — for they are undressed and weighed in a sheet — and make sure that they are properly clothed. She sees that all who have not bathing facilities at home are tubbed and scrubbed at least once a week. Further they are taught cleanliness of person, and care and protection of those about them, and especially care of their mouths when coughing. Each patient carries on her arm a blue linen bag containing, within, a smaller waterproof bag, and also some sheets of tissue paper, which are used to protect the mouth when coughing, to receive the sputum, which is then placed within the waterproof bag. The papers containing the expectoration are burned each night, and the inner bags are washed in carbolic from time to time. This form of bag has been devised because few women have pockets in which a paper bag can be carried, and it has been found that they will not carry about a paper bag in their hands.

On Sundays the patients remain with their friends and families, and the nurse makes visits to the homes, sees where the patients live and sleep, sees the family who are there assembled, and is therefore able to make a report to the physician as to the home conditions. This inspection of the home and families is of great importance. Sometimes it is repeated on successive Sundays until conditions are made satisfactory, sometimes the conditions are so good that no further visits are necessary. But it is expected that a visit shall be made on every one about once in six weeks after the routine has been established. It goes without saying that this visiting requires tact on the part of the nurse, and not every one, no matter how skillful in the wards in the care of the sick, has the ability to gain the confidence of the patient and become her friend and that of the family as well. As the result of her visit or visits the nurse fills out a report which is filed in the records.

The physician calls each day, hears the report of the nurse, talks to the patients, and makes physical examination of one or more as the case may be, so that there shall be proper records of each case and that he shall have personal knowledge of the pulmonary changes from week to week. Practically all the medication is in the form of rest, food and fresh air. Heroin or codein is used if the cough is distressing, though in small quantities. Tuberculin is used in a number of cases both for diagnosis and for treatment.

The total number of patients treated since we started has been 71, and these have been given 5,900 days of treatment. These patients would be classified as follows: 1st, incipient, 8; 2d, well marked, 29; 3d, advanced, 34.

Of these there have been discharged: Arrested,

10; improved, 4, who went to Rutland, as home surroundings were unfavorable; relieved, 2 non-tuberculous, showing signs of consolidation, but proved to be chronic influenza by sputum and negative tuberculin test; unrelieved, 30, of whom 6 had died; under treatment, 25.

The 10 discharged arrested were under treatment for periods of time varying from three to eight months. Of these 10, only one was from the group of incipient cases and the others from the well-marked group. Since discharge these patients have been required to report to the Samaritan at least once every two weeks in order that there should be no undiscovered relapse. All are doing well and are steadily gaining in weight. Some of them have returned, unfortunately, to their former employment where the disease was contracted, four are taking complete care of their homes and one or two have returned to school or are remaining at home. Of the four improved cases who left us for Rutland two are doing well. One of these was from the incipient and the others from the well-marked class.

Of the cases unrelieved, 7 went to other hospitals, 3 went to Europe having shown no special change, 5 were discharged for insubordination, 5 gave up treatment in from one to six days, and 4 were unable to keep up. The 6 cases who died were all very advanced on admission and the prolongation and comfort of life was all that could be hoped for. Of the 25 cases under treatment at present, all but two advanced cases are doing well and it is expected that 4 will be discharged arrested before the middle of June.

A few striking cases are worthy of mention. A girl of twenty-two years from a poor home and surroundings about four miles from the camp, had well-marked involvement of both apices. The cough was distressing, and expectoration about 3 oz. daily. She began treatment ten months ago, steadily gained weight from the start, and with the constitutional improvement the process rapidly became quiescent. She gained 30 lbs. in six months, her lungs became entirely dry and she was discharged three months ago without a symptom and has remained well since.

A woman of forty years, showing an advanced process involving both lungs, with occasional night sweats and considerable expectoration came under treatment in December, 1906. She could not speak aloud on account of a larynx showing marked swelling and infiltration about arytenoids and false cords. She has gained 27 lbs., her cough consists of a slight attack every morning, her lungs are quiescent, and her voice has almost completely returned. A few weeks will probably add her to our list of arrested cases.

A woman of about twenty-eight years with a cavity in the left upper chest and extensive involvement of the right, after six months' treatment has gained 20 lbs., the general condition shows remarkable improvement, the lungs are rapidly drying up and we hope for cavity contraction.

Complications and emergencies have been very few in number. There have been no severe hemorrhages on the grounds, and only one patient when at home has had two moderately severe hemorrhages, of about one-half pint of blood each time. One other patient had a slight hemorrhage. Even chills are of rare occurrence, and no cases of pneumo-thorax have occurred. Diarrhea in the summer months and grippe in winter have been the greatest enemies, and while all have been retarded at times by these ailments, only one or two have been seriously affected.

One patient who had an advanced process with a quiescent tuberculous larynx, after five months of treatment gained 20 lbs., cough was dry and the lungs were almost free from râles. The patient caught a severe cold and the quiescent throat flared up. Swallowing became impossible from pain and she died in about four weeks, practically from starvation as the lungs remained quiet. She refused to enter a hospital.

High temperature is not of frequent occurrence, and when it persists the case is required to remain at home for a few days in bed, being visited by the nurse in the meantime until the patient is thought fit to report for treatment. Pregnancy has only complicated conditions in one case and here improvement has been so constant and marked that we hope to escape the almost certain usual termination of this disease following confinement.

Tuberculin has been in constant use both for diagnosis and treatment. We are giving Koch tuberculin T. R. (imported) in about 15 cases once or twice a week. We begin with a dose of .0001 mg. and steadily increase it, avoiding reactions until we reach 1 mg. The arrested cases receive tuberculin weekly when they report. This treatment is only given to selected cases where cavity, fever and hemorrhage are absent. We feel confident that this has benefited not a few cases in quieting tubercular laryngitis and stimulating resistance in cases that improved to a certain point and then remained at a standstill. We have been more ready to allow an arrested case to return to her former employment because fortified with increased resistance by this means.

All the cases are proved to be tubercular by finding tubercle bacilli in the sputum or by the tuberculin reaction. In several cases this latter test has been necessary, and here Koch's old tuberculin in successive doses of .1 to 1 and 10 mg. has been used at intervals of four days. In only two cases have we failed to get a positive reaction where it was required for diagnosis, and these have proved to be cases of chronic influenza.

Our experience has demonstrated that in the climate of Boston an open-air camp can be conducted successfully both winter and summer, spring and fall, — cold and wet and disagreeable days appear to have but little effect upon the attendance. The results of the experiment have been very satisfactory from the clinical side, and it seems that the treatment presents these distinct advantages.

The daily removal from their homes gives the patients a decided mental shake-up. They have the companionship of others, some of whom are

worse off than themselves, they are distinctly doing something to make themselves well — taking the cure in the fresh air — and they are free for the time from the depressing influences and petty annoyances of home environment. The constant presence of the nurse in whom they can confide and talk over their family difficulties is of great assistance, and, at the same time, she deters them from conversation about their symptoms. The daily visits of the doctor, to whom trivial, but to the patient important and perplexing, questions can be referred, all tend to keep up the general morale of the patients. The responsibility for their own actual condition is shifted to the shoulders of the nurse and doctor and not carried in doubt by themselves. On the other hand, the constant supervision of the nurse enables the detection of unfavorable symptoms to be made early, as well as wrong-doing and recklessness. With the wards of the hospital always at hand to help out in cases of emergency, such as the appearance of a sudden rise of temperature, hemorrhage or other unexpected event, there is a sense of security not otherwise felt.

To those who still believe that temperature taking and the daily booking of symptoms are not desirable things for the majority of patients to do, this form of treatment must appeal; while those who think that it is a desirable feature in treatment can add it to the régime.

Many patients cannot be removed from home, and have even a small sum paid for their board without great discomfort to the whole family. In order that the mother may go to a sanatorium often the children have to be put away in "homes" or boarded. By our method the home is kept intact and as soon as possible the patient allowed to participate in the light home work during the mornings and evenings, often to the great advantage of all concerned. The daily education at the hospital is carried back to the homes with the result, we believe, that the other members of the family will lead a much more hygienic life than they otherwise would. The one disadvantage that we can see is that connected with the going to and coming from the hospital. There is necessarily a certain amount of wear and tear upon the patients during this time that is undesirable. To obviate this we are trying to have our patients, as far as possible, from the district immediately about the hospital. When this is accomplished, as it will be in the course of time, the House of the Good Samaritan will become a center for this particular portion of the city; and the ease of administration on the part of the nurse, and the one disadvantage to be urged against the scheme, will be reduced to a minimum.

As to discipline there is very little to say. There are so many applicants that if patients are neglectful and do not come regularly and punctually they are warned that if they persist they will be dropped from the rolls and their places filled by others. Naturally there are a number who come who do not like the restraint and discipline and quickly give up. Some are soon found to be too weak really to undertake the daily journey, but beg to be allowed to try and in a short time have to remain at their homes or enter other institutions for care and treatment. Most of the cases are, however, selected from patients presenting themselves at the general medical clinic of the Massachusetts General Hospital, where Dr. Floyd is also on duty, and it is here that he is able to make his selection of patients living in the vicinity of the hospital.

Incidentally, I may say that our experiment has aroused no interest among the doctors in the vicinity. When we started our experiment we invited all the doctors of the neighborhood to a tea at the hospital to explain to them our purpose and ask their co-operation, but no one came excepting one or two who were specially identified with the tuberculosis crusade, and had no need to be present, knowing well all about the work beforehand.

At the end of the year it is well to look over our books and consider whether in reality the experiment has been an economic success.

The first cost of the undertaking was defrayed by special gift to the hospital for this purpose, and nearly $1,000 was spent. With this money the portable house outside was purchased and set up for $324, and the necessary changes in hospital were made, to provide a new dining-room for the hospital help, and to provide water installation for separate dish-washing in the old dining-room that was to be used by the out-patients. Fencing and grading had to be done. In addition, chairs, blankets, comforters and hot-water bottles had to be purchased. These latter are not expensive and can be used for some time without renewal. These changes are in the way of permanent investment, and should not therefore be put into the general cost of maintenance, for the necessary changes in any other hospital would be entirely different and would depend on the local conditions. The cost of blankets, chairs, etc., depends on the quality. We have used the Allen camp chair, costing $1.75. It is light, easily handled and comfortable. Gray blankets have cost $4 per pair. Comforters are also useful in the winter and cost less than $1. Stone water bottles costing about 25 cents apiece are used, as they keep the heat longer than rubber ones, and do not leak as easily.

At the beginning of the experiment it was not found necessary to employ a special nurse for this service, but as the numbers increased the whole time of one nurse has been required. An additional maid was employed from the first to care for the dishes in the dining-room and assist the cook to serve the meals. These have been the only additions to the administrative staff of the hospital that has been required to care for the 25 patients. The remainder of the expense has been for their food. It is impossible to estimate exactly the cost of this food as a certain part is bought with the general supplies of the hospital — milk, butter, eggs and flour, the principal items, can be told exactly, but vegetables, meats, etc., can only be approximately estimated by comparison with the previous monthly expenses of the hospital.

Milk costs a trifle less than 7 cents per quart. Eggs vary from 50 to 20 cents, and are used accordingly. Butter costs on the average 28 cents. Flour has been $5.50 to $6.00 per barrel. The total cost of the experiment for extra service and food for the year has amounted to rather less than $2,000. For this amount there have been given 5,900 days' treatment, making a cost of 33 cents per day for each patient.

In the beginning, when there were only 6 to 10 patients, the actual cost of the total hospital expenses was less than it had been during the preceding year when the hospital was first opened. This was due to economies that had been introduced during the year. This is only mentioned as it was a great encouragement to the managers to find that the hospital bills rather decreased than increased during the trial period of expansion.

In conclusion, all that remains to be said is that the House of the Good Samaritan has apparently made an experiment which can be adopted by many communities to assist them in solving their local tuberculosis problem. Many towns and cities have small hospitals whose beds cannot from the nature of things be used to care for the cases of tuberculosis of the town or city. In the smaller places practically all the physicians are interested in these hospitals and therefore can co-operate in having a large portion of tuberculous patients who come under their care congregate at the hospital. This real knowledge of the patients and their home surroundings by the physicians themselves is an advantage that the physician of the large city does not possess and for the most part has to learn second-hand through the eyes of his visiting nurse. It is perfectly possible for ways to be devised so that each patient shall return to his or her own physician for treatment or advice, or the work can be delegated to a visiting man, as may be deemed wisest. Those who support the hospital by their contributions can be educated to the need of such a day-sanatorium by lectures and the organization of a committee on tuberculosis and thus still greater interest in the hospital aroused in the community. Such patients as can should pay a small fee for their care at the hospital. It may be possible later either to get a special pavilion built for the care of the very advanced cases of tuberculosis or to get the city authorities to take action and provide beds to which the stigma of pauper is not attached for this much-deserving class of sufferers. To the community having a hospital in active operation that will attempt to follow this experiment we feel that more can be done to help the sufferers from phthisis and at a much less relative cost and trouble than by any other means yet suggested to fight tuberculosis.

Mrs. Russell Sage has given $125,000 to the Association for the Relief of Respectable Aged Indigent Females in the City of New York. The home of the Association, at 104th Street and Amsterdam Avenue, is being extensively enlarged, and when the addition is completed its capacity will be increased from 90 to 270 beds. — *Medical Record.*

ON NEUROLOGICAL AND PSYCHIATRIC DIAGNOSIS.*

BY LEWELLYS F. BARKER, M.D., BALTIMORE.

On taking up the subject allotted to me, "The Historical Development and Relative Value of Laboratory and Clinical Methods in Diagnosis, with Especial Reference to Neurological and Psychiatric Diagnosis," I must confess to have experienced some difficulty in deciding how to treat it. It was not entirely clear to me how sharply to separate clinical from laboratory methods.

If one means by a clinical method a procedure which is carried out at the bedside of the patient and by a laboratory method one which is applied in a room, building or workshop, especially fitted with suitable apparatus for conducting investigations in diagnosis, he is making a distinction where there is not always a difference, for the bedroom, at any rate in hospitals, is a room so fitted and is a laboratory. If by laboratory methods are meant those which cannot be applied at the bedside, then we have relatively few laboratory methods of diagnosis in neurology and psychiatry, though the recent development of biological reactions and complex metabolic studies give promise of more in the near future. Most physical, chemical and psychological methods of diagnosis can be used at the bedside, though it is not always convenient to use them there. Or if by laboratory methods we mean methods which are generally or more conveniently used in special rooms not occupied as the bed-room of the patient, then the field of laboratory diagnosis is wider, especially if instead of limiting the examinations in these rooms to the study of materials removed from the patient we take the patient himself there, as we often do, for the making of certain tests. But if the patient himself is removed to the laboratory for examination, the physician is at his side, and the method remains clinical. Thus it is obvious that bed-rooms are used as laboratories, and that laboratories are used for clinical work, and no sharp line can be drawn between the work and methods of the two places.

Nor is it feasible to distinguish clinical methods as methods of simple observation from laboratory methods as methods of experiment. For we make relatively few observations that are simple, unaided registrations of sense-impressions. On the contrary, the great mass of so-called clinical observations are observations under particular conditions modified at the will of the observer; that is to say, are experiments. Moreover, in all our clinical work — in the collection of facts, in the arranging of them, and in drawing inferences from them — the results of researches in laboratories are continually being utilized. Our observations, our arrangements of facts in sequence, and our conclusions are practically all based upon knowledge which at one time or another has been gained in special laboratories.

Thus while there are clinical methods in neu-

* Read before the Congress of American Physicians and Surgeons in Washington, May, 1907.

rology and psychiatry that are not laboratory methods, and there are laboratory methods which can only remotely be regarded as clinical, it seems to me that all the methods used in neurological and psychiatric diagnosis must be regarded as clinical methods whether they are applied at the bedside or in any one of many clinical laboratories. My task is therefore made easier and it will be permissible, perhaps, to devote all the time at my disposal to a brief consideration of the way in which neurological and psychiatric methods of diagnosis developed to their present status. No hard and fast line can be drawn between laboratory and clinical diagnosis.

The clinic is the mother of the medical laboratories, and they have one and all since their birth contributed to the parental support. The anatomical laboratory dates back three hundred years. The physiological and physiological-chemical laboratories, the pathological laboratory, the pharmacological laboratory and the hygienic laboratory were creations of the nineteenth century. The first general clinical laboratory proper for internal medicine was established by von Ziemmsen a little over twenty years ago.[1] The facilities now offered in well-equipped laboratories in connection with hospitals, manned by trained observers, are of incalculable value, bettering as they do the diagnosis, the prognosis and the treatment for the patients, besides serving for the promotion of knowledge. The recent division of the research work of the general clinical laboratory into biological, physical and chemical sub-departments marks another era in medical-laboratory specialization. The foundation of the electro-diagnostic and electro-therapeutic laboratory was a landmark in the history of clinical neurology, and the establishment of psychopathic laboratories, beginning with that set up by Kraepelin (1894), promises to be of fundamental significance for the advance of psychiatric diagnosis.

The diagnosis of nervous and mental diseases made but slow progress until comparatively recent times. Mere clinical observation unaided could do but little until (1) laboratory studies had supplied some preliminary knowledge of the structure and functions of the nervous tissues; and (2) the growth of psychology as a science had yielded some insight into the workings of the normal mind. Physicians had from early times on recorded a number of symptom-complexes, and pathologists had observed certain of the grosser lesions in the central nervous system, but a knowledge of the relation of symptoms to lesions grew far more slowly in neurology than in other departments of internal medicine. The reasons are not far to seek.[2] The mere mechanical difficulty of opening the skull and spine was an impediment to neuropathology. Further, owing to the chronic course of most diseases, those who observed the early symptoms rarely followed the cases to their termination, and in homes for the incurable and asylums where the late stages were passed through, there was too often lack of medical interest. The peculiar and complex structural organization of the nervous system was appalling to the majority of investigators. It was easier to study the pathology of diseases of the lung or liver, in which alterations in one area produced effects similar to those in another area of the same size, than to investigate the central nervous organs in which apparatus ministering to totally different functions may lie close together, perhaps only a few millimeters or a few centimeters apart, or in connection with which the disconcerting observation had been made that a lesion the size of a pin prick in one area can be of greater injury to the organism as a whole than the passage of a crowbar through another. In a whole series of diseases, manifestly of the nervous system, no anatomical changes were discoverable on thorough miscroscopic study of serial sections of the organs. It is but little wonder that the majority of physicians have preferred to work at problems which seemed easier to solve than those which the neurological and psychiatric inquirer is compelled to face.

Fortunately for the sciences of neurology and psychiatry, however, there have always been minds to which these problems have particularly appealed, and to which the difficulties, though great, did not appear insuperable. Romberg, inspired by Sir Charles Bell's great discovery of the sensory and motor nerves, and influenced by the more precise researches of Magendie, realized the value of applying physiological knowledge to the study of neuropathology and to neurological diagnosis; he gave modern clinical neurology a firm foundation by developing knowledge concerning disease of the peripheral nerves. In psychiatry, after Pinel had broken the chains in the Bicêtre, and John Conolly at Hanwell had promulgated the doctrine of " no restraint," a great step forward was taken when Griesinger made it clear that the science is a part of neuropathology and inseparable from it, and showed how necessary a thorough knowledge of the latter is for scientific work in the former. Griesinger's recognition of the defects in medical teaching of neural and mental phenomena and his demand not only for theoretical instruction, but for practical work by students in psychiatric clinics to be established at the universities, led first to the foundation of special clinics, and many years later to obligatory attendance and obligatory examinations in these subjects. These reforms gave an enormous impetus to the advance of both diagnosis and treatment in neurology and psychiatry.

Modern neurological diagnosis is a direct outgrowth of the physiological research undertaken on the nervous system at about the middle of the last century. The studies of the electrophysiology of muscles and nerves, the recognition of the spinal cord as an organ more or less independent of the rest of the nervous system, the inquiries into the functions of the organs of special sense and the relations of these to the higher psychic functions, the experimental investiga-

[1] *Cf.* Welch (W. H.): The Evolution of Modern Scientific Laboratories. Johns Hopkins Hosp. Bull., Balt., 1896, vii, pp. 19-24.
[2] *Cf.* Westphal (C.): Psychiatrie und Psychiatrische Unterricht, Berlin, 1880.

tions bearing upon the functions of the cerebral cortex — all were utilized for the extension of clinical methods of examination, and for the interpretations of clinical findings.[3] Slow but sure progress was made also through the control of clinical studies by autopsies and the macroscopic and miscroscopic examinations of the brain and cord. Especial activity in such studies was shown by the clinico-pathological school at the Salpêtrière, of which Charcot was leader. English neurologists, notably Hughlings Jackson and Gowers, also made valuable contributions. These, with the clinical electrical studies of Duchenne, Remak and Erb, did much to increase the accuracy of diagnosis. The invention by Helmholtz of the ophthalmoscope permitted the direct observation of a part of the central nervous system (the papillæ of the optic nerves), a method of examination so important for differential diagnosis that every neurologist feels impelled to perfect himself in it. The study of the neuroses, especially after the introduction of the Weir Mitchell cure, helped to bridge the gap between neurology and psychiatry.

The laboratories of anatomy, physiology and pathology have afforded the data for the *diagnosis of the seat of lesions* and their nature. The localization has become more precise as these sciences have grown, passing from the gross terms cerebral, cerebellar, spinal and peripheral, through systemic, nuclear and segmental, to, more recently, the neuronal. Criteria for a *diagnosis of the nature of the lesion* have been drawn from pathological anatomy and physiology, and lastly progress has been making in the *diagnosis of the causes* of nervous diseases through advances in pathogenetic studies. Time will not permit even a sketch of the contributions to diagnosis made by the various laboratory subjects, but anatomy, physiology, pathology, anthropology, biology, chemistry, physics and pharmacology all have lent a hand. The nature of the infectious diseases which involve the nervous system — cerebrospinal meningitis, tuberculosis, syphilis, tetanus, influenza, leprosy, diphtheria — has been cleared up for us by bacteriological studies, and modern parasitology has revealed the mysteries of the coma of malaria and the sopor of African sleeping sickness. The clinical laboratories have applied the methods of chemistry, physics and biology and revealed to us the changes in the blood, the urine and the cerebrospinal fluid in nervous disease. New methods of examination are constantly being devised. Within a few months the workers in immunity problems have shown us how to demonstrate the presence of amboceptors for the syphilitic antigen in the cerebrospinal fluid of patients suffering from dementia paralytica. Each year we learn not only how to see, how to hear and how to feel more precisely, but actually to see, hear and feel things entirely new to us, to make observations of phenomena which all through preceding centuries have escaped detection by clinicians.

[3] *Cf.* Erb (W.): Ueber die neuere Entwicklung der Nervenpathologie und ihre Bedeutung für den medicinischen Unterricht. Leipzig, 1880.

In searching for disturbances of motility, sensation, reflexes, nutrition, speech, intelligence, emotion or will, the tendency of modern neurology and psychiatry is to become ever more objective, to exclude as far as possible the subjectivity of the examiner in observation and record, for in this way only is it possible to obtain results which are comparable and which can be utilized for science. Hospital records strive now in describing what can be seen, felt or heard, to use words of pure description unmixed with judgments or inferences, though that they still fall far short of their aim, every one who has occasion to consult these records knows. To counteract the errors of omission and commission of description, other still more exact methods of scientific registration are being more and more employed. Thus optic methods of reproduction, photography (simple, stereoscopic and cinematographic) are helpful in both neurology and psychiatry, and various graphic methods of investigating motor disturbances are gradually finding a place. The phonograph has been utilized for the registration of phonetic expressions, and the analysis of phonetic processes by motor graphic methods has been begun.

Perhaps the greatest progress making at present lies in the improvement of methods of investigating the psychic states and processes in nervous and mental diseases. The examination of the psychic side of a patient, often more important than the somatic inquiry, should, it is now realized, be carried out just as systematically and objectively as the examination of the physical condition. Psychiatry has suffered seriously from subjectivity. Thanks especially to the transfer of the methods of psychophysics to psychopathology, data are gradually being accumulated which are independent of the accidental subject of the observer. The principle of the " uniform stimulus " and the principle of the " reaction-time " have been adopted in the clinical psychopathic laboratory with gratifying results.[4] The testing of the perceptive faculty, the investigation of sense perceptions, the study of the orientation of the patient, the trial of memory, the examination of powers of work, and especially the inquiry into the characters of the associative processes, as conducted by the physician who has been well trained in the modern psychiatric clinic, permit of a precision and an extension to which the old clinical conversation could not attain. Though our knowledge of facts is as yet very incomplete, our comparable experiences with accurately studied material too small to permit of such reliable clinical formalizing in mental disorders, there can be no doubt that as we continue to observe what actually occurs in nature and to sift our observations empirically, separating as well as we can the essentials from the episodal in the disease-picture, we shall arrive at generalizations that will give us a diagnostic power in psychiatry equivalent to that we possess

[4] *Cf.* Kraepelin (E.): Der psychologische Versuch in der Psychiatrie. Psychol. Arb., Leipz., 1896, i, pp. 1-91. Sommer R.): Lehrbuch der psychopathologischen Untersuchungs-Methoden(Berlin u. Wien, 1899.

in other branches of internal medicine.[5] The certainty with which it is now possible to make the diagnosis and prognosis in dementia paralytica is an instance in point. Hallucinations, delusions and abnormal moods, it has deen discovered, are less essential for diagnosis than are disturbances of orientation and of the perceptive faculty, motor states and flight of ideas. Single disturbances not pathognomonic in themselves assume diagnostic importance according to their special grouping, as, for instance, in the well-known example of the different relations of confusion, excitation and orientation in kakatonia, mania and amentia. The widening of the functions of the anamnesis in history-taking by Janet and the emphasis laid upon the katamnesis by Kraepelin, have markedly enriched our diagnostic data in psychasthenic states in the one instance and in processes which terminate in dementia in the other.

Among the more interesting features of contemporary psychiatric diagnosis is the attention which is being paid to the so-called psychoanalytic method, as practised by Freud,[6] Riklin,[7] Jung.[8] Those who are working with Freud's method of investigating the psychology of daily life, of hysteria and of dreams are much impressed with the ingenious conceptions of that investigator and urge those who are skeptical not to condemn it on superficial examination or from prejudice due to Freud's over-emphasis of the rôle played by sexuality in the psyche. Some of the explanations which it is asserted the method affords almost remind one in brilliancy of the interpretation of the handwriting on Belshazzar's palace wall. The search for the hidden psychic complex, to which some painful emotion is attached, unbearable in conscienceness and accordingly suppressed, is proving to be a helpful idea in the study of psychiatric cases, Freud maintaining that the hallucinatory delirium may represent a compensation for unsatisfied desires, hinting that man sometimes resorts to a psychosis in order to find in its dreamy states that which is denied him in real life.

Further studies suggest that much light may be thrown upon paranoaic states by assuming that they, like the mental states of the hysterical, proceed from the suppression of painful memories, and that other symptoms in dementia precox — the weakness of apperception, the perseverations, the tendency to symbolism, the stereotypism, the command-automatisms, the apathy, the aboulia and the negativism (to speak in the slang of the psychiatrists) — may be determined more or less by the suppressed complex. Such an explanation, however, in order to account for the stability and resistance of the paranoid dement, contrasted with the mobility of the hysteric, has to assume a fixation of the affectivity in the one, possibly due to some metabolic intoxication (Jung), which is absent in the other.

A very great impetus would be given to neurological and psychiatric diagnosis in America if psychiatric clinics were to be established in connection with every great hospital or medical school. It is humiliating to think that this country, so far in advance in many other respects, is fifty years behind Germany, Italy and France in the recognition and satisfaction of this particular need. Since one in every three hundred inhabitants of this country is either insane or feebleminded, and the estimated cost to this country of psychiatric disease is, according to Dana, $85,000,000 annually, a cost which is increasing at the rate of 4%, the desirability of education in these matters is obvious enough. Half the money which was put into a temple recently reared by propagandists of a pseudo-scientific cult in Boston, in order to minister to certain psychic needs of some of the American people, would have been sufficient to build a first-class psychiatric clinic. The psychiatric clinics should come in America, and at once. Fifty years later is better than later! There can be no doubt that America will sooner or later lead in this, as she is doing in other sciences.

[5] *Cf.* Kraepelin (E.): Ziele und Wege der klinischen Psychiatrie. Allg. Zeitschr. für Psychiat., 1896-9, liii, p. 840. Wernicke (C.): Aufgaben der klinischen Psychiatrie. Breslauer ærztl. Zeitschr., 1887, p. 145.

[6] Freud (S.): Die Traumdeutung, Leipz. u. Wien, 1900; Zur Psychopathologie des Alltagslebens. (Vergessen, Versprechen, Vergreifen), nebst Bermerkungen ueber eine Wurzel des Aberglaubens. Monatsh. für Psychiat. u. Neurol., 1901. x, pp. 1-95.

[7] Riklin: Zur Psychologie hysterischer Dammerzustäude und des Ganserschen Symptoms. Psychol.-neurol., Wochenschr., 1906.

[8] Jung (C. G.): Diagnostische Associationsstudien Leipzig, 1906; Die Psychol. Diagnose des Tatbestanden, 1906; Ueber die Psychologie der Dementia Præcox; Ein Versuch. Halle, 1907.

THE HISTORICAL DEVELOPMENT AND RELATIVE VALUE OF LABORATORY AND CLINICAL METHODS OF DIAGNOSIS.*

BY RICHARD C. CABOT, M.D., BOSTON.

PHYSICAL DIAGNOSIS.

I SINCERELY hope that this Congress and the year 1907 will mark an end of the false and harmful distinction expressed in the title of this address; the distinction, namely, between "laboratory" and "clinical" methods of diagnosis. My first reason for objecting to this distinction is that it is impossible of definition. No one doubts that we apply what are called *clinical* methods of diagnosis to the patients who consult us at our offices or in a hospital dispensary; yet in such cases nothing occurs "at the bedside," because the patient is not in bed. My second objection is that there are many methods which are carried out sometimes at the bedside and sometimes in the laboratory, the difference depending not upon anything inherent in the method employed, but wholly upon extraneous considerations. For example, an examination of fresh blood must be made at or near the bedside; while an examination of stained blood may be made either at the bedside or elsewhere.

It may be said that the distinction is a real one, though not coincident with the literal meaning of the words. It is often supposed that by *laboratory* methods of examination we mean the most *exact* instrumental methods, contrasting them with the *rougher* and more approximate processes used at the *bedside*. But this distinction is obvi-

*Read before the Congress of American Physicians and Surgeons in Washington, May, 1907.

ously fallacious, for we have few more exact instrumental methods than the measurement of temperature by means of the clinical thermometer; yet this is often carried out at the bedside, or rather in the bed (in case the patient is in bed) and not in the laboratory. The measurement of blood pressure, by Erlanger's apparatus, is a very delicate, difficult and exact method of examination, which (in bed-ridden patients) must be carried out at the bedside. It is exact, instrumental and clinical; yet it belongs to the type of methods which are often thought of when we speak of "laboratory" diagnosis.

But although the distinction cannot be defined and does not in fact exist, we *do* attempt sometimes (and most disastrously) to approximate to it. There are physicians who work wholly in the laboratory and others who never visit the laboratory. The distinction between the "laboratory diagnostician" and the "clinical diagnostician" is a real but a vicious one. There should be no diagnoses made merely in the laboratory, and none merely at the bedside, unless what are called "laboratory methods" are carried out, as they may be carried out, at the bedside. There should be no diagnoses made without regard to all the essential facts of each case; and there are few cases in which all the essential facts can be attained in the laboratory and few in which a "bedside" examination suffices.

All that tends to make us build up our diagnosis *at a distance from the patient*, and without the constant reminders of every side of his case given us by his actual presence before our eyes, — all such tendencies, I say, are dangerous. There should be no laboratory practitioners and no clinicians who do not understand and use "laboratory methods," so called. Instruments, accuracy and common sense are of importance in all types of diagnosis, and of no more importance in any single type than in any other.

The only true division between the kinds of investigation which should be carried out upon patients is the division between

(*a*) The work of experimental research, and

(*b*) The work of medical practice.

Experimental work, whether in the laboratory or at the bedside, needs a different kind of training, a different mental attitude, sometimes a different standard of accuracy, and above all a different distribution of one's time. Very few men can do both the work of experiment and the work of practical medicine; but every practising physician should do both what is called "clinical" and what is called "laboratory" work; that is, every man should work both at the bedside and in the laboratory, if he is to do the best for his patient.

THE IMPORTANT DISTINCTION BETWEEN EXACTNESS OF METHOD AND CLEARNESS OF STATEMENT IN DIAGNOSTIC WORK.

Does physical diagnosis tend towards greater and greater exactness of method? Is the greatest possible exactness desirable in all methods of physical diagnosis? I think not. Exactness, like an umbrella, is sometimes very much in place, and sometimes not. There are methods in use to-day quite uselessly exact, and others in which a greater exactness is very desirable. The degree of accuracy desirable in any diagnostic procedure is governed wholly by the ends to be secured. A pair of scales perfectly adequate for the weighing of hay would be far too rough and inaccurate for ascertaining the weight of a patient as it varies from week to week, while the scales used for this latter purpose would be valueless as a chemical balance. Yet, on the other hand, it would do us no good to have a pair of scales by which we could weigh our patients with a degree of accuracy equal to that of a chemical balance, for we could *do nothing with the results* when we got them. We could infer nothing from the slighter variations and time and money would be wasted in the attempt. When I see statements of blood counts which tell us, for example, that the patient had 5,633 leucocytes to the cubic millimeter, I cannot help making two comments. First, that the degree of accuracy to which the statement pretends is wholly useless; and second, that it is only the *pretense* of accuracy after all. It is pseudo-science and not science. Now, if there is one thing which we who try to do scientific work should avoid more than another, it is, I think, this *pseudo-scientific pretension*, — the appearance of accurary expressed in figures and diagrams, when there is no such accuracy in fact. All blood counts should end with at least two zeros, usually with three.

Another province of diagnostic work in which we have a great deal of the appearance without any of the reality of accurate work, is the quantitative estimation of urinary solids. Except in rare cases we can make no use of these figures; they do not tell what they seem to tell, namely, what the kidney is able to do, or what the metabolic processes of the body are accomplishing. The same is true of the quantitative estimations of acidity in gastric contents, as has recently been pointed out by Dr. Charles P. Emerson, in his most valuable work on clinical diagnosis. Our quantitative estimations of gastric acidity cannot possibly be more than roughly approximate, owing to the number of disturbing factors whose influence cannot be measured. Hence, it is a "fake" to express them in three decimals.

There are many other instances in which we have a great deal more of the appearance of accuracy than of the reality, and a great deal more accuracy than we can use even were it real. On the other hand, there are some of our diagnostic methods which are now very much rougher than we wish they were, and where a great degree of exactness is most desirable. For example, the intensity, duration and pitch of heart sounds and breath sounds are data at present, appreciable only in the roughest way, and our statements about cardiac and pulmonary diagnosis are consequently full of lamentably vague terms. Whether to call a given breath sound bronchovesicular or not, whether we say that a given heart sound is accentuated or not, must often be

very arbitrarily decided so long as we have no accurate methods of measuring these sounds.

What, then, is the immortal soul of this passing demand for general increase of accuracy in all places and at all times? It is, I believe, a demand for *clearness of statement*. Clearness of statement in regard to the results of our examinations is always and everywhere desirable; we cannot have too much of it. But this very clearness is often obscured by the use of figures and quantitative terms which mislead those who hear or read our statements. It is not only vagueness of statement, but the befogging of the sentence with statistics and figures that obscures our scientific writing. What we want to know from every man is — " Just what did you observe, and just what inference can be legitimately deduced therefrom? " About these matters we cannot be too exact.

TWO DOMINANT TENDENCIES IN PHYSICAL DIAGNOSIS.

(*a*) A tendency beginning to make itself felt in physical diagnosis is that which seeks *directness of contact* with the facts to be studied. Instead of conjectures about the condition of the bladder wall, conjectures based upon the subjective symptoms and upon the analysis of the urine, we are beginning to insist in all doubtful cases upon *direct inspection* of the bladder by means of the cystoscope. Methods of testing the amount of hemoglobin in the blood are more likely to be accurate if they can be carried out without processes involving dilution (and so errors), or contact with chemicals which may alter the coloring matter in some important respect. If we can compare the color of the blood directly with a standard, we have saved many chances for error. Dilutions and stains are of course necessary in many cases, but they all increase the likelihood of error in our results, and should never be used when more direct methods of examination are possible.

(*b*) Another tendency which I think will lead to very important results in the next decade shows itself in the distinction between *functional and anatomical diagnosis*, and in the increased importance attributed to the former. What we want to know is not only (or chiefly) whether or not lesions are present in any organ, but whether they interfere with the function of that organ or other organs, and if so, how far. Anatomical diagnosis asks: " How does the organ look and feel? " or " How would it look and feel if we could see it and feel it? " Functional diagnosis asks: " What can the organ do? How useful is it to the body? " Not appearance, but behavior, is more and more our interest. It is not of so much importance to know whether there is enlargement of the inguinal or axillary glands, or of the adenoid tissues of the throat, as whether these enlargements do any harm, interfere with any function. Especially is this distinction of importance in the field of gynecology. There are a dozen lesions in the adult female pelvis for every genuine interference with function; and the chief business of the diagnostician in this field is to discover which lesions to take seriously and which to disregard, which to treat and which to let alone.

" When you see a head, hit it: when you find a lesion, treat it." Such a maxim governs the practice of far too many physicians to-day. When we find a lesion, we should study with our best care, our best judgment and sense of proportion, all the facts in the case, with special reference to the question — " Shall I treat this lesion, or let it alone? "

THE VALUE OF SOME RECENT ADDITIONS TO THE TECHNIQUE OF PHYSICAL DIAGNOSIS.

The title of the subject assigned to me in this discussion bids me attempt an appraisal of the relative value of some of the different methods of physical diagnosis. To that attempt I now turn, choosing as best I can out of the many technical processes that might be passed in review.

First, the oldest and simplest methods are still the best; that is, yield the most information useful for the understanding and treatment of disease. Physicians looked at their patients and felt of them (that is, used " inspection and palpation ") long before they practised any other method of physical examination; but these methods still yield us a far larger bulk of useful information about our patients than any other methods. Percussion, although discovered earlier than auscultation, does not, however, as a rule, yield as much valuable information. When we come to the examination of the secretions and excretions of the body, the same statements still hold true. Here also inspection yields us the most important information. In nine out of ten cases, as I see them in private practice, I make no examination of the blood other than that afforded by direct inspection of the color of the blood when soaked into a slip of paper. The visual data about urine, sputa and feces are still the most important. I am excluding here, of course, the data obtained by microscopic examination, which, literally speaking, are part of inspection, but not part of that ancient and honorable type of inspection which historically precedes all other methods.

Passing now to some of the more recent methods of physical examination on which a judgment may be pronounced, I should say that:

(*a*) The diagnostic value of *fluoroscopy and radiography* is established beyond doubt for all diseases or suspected diseases of bone, and for all diseases in which the presence of concretions is suspected. In such diseases I think it is essential that the patient should have access to a competent practitioner of radiographic technic. On the other hand, I do not regard it as essential, or even of any considerable importance, that every patient suffering from diseases of the heart, lungs or stomach should be examined by the x-ray. Although it is true that x-ray examination occasionally yields us information of great value in diseases of these organs, yet such cases are relatively rare. I do not think that x-ray exami-

nation of these organs should become a part of the technic of every up-to-date practitioner.

(*b*) The estimation of *blood pressure*, and especially of systolic blood pressure, seems to me also to have proved its value as a part of the routine examination of every case in which disease of the heart, arteries, brain or kidneys is suspected. My reasons for this statement are as follows: We all of us believe that it is of value in diagnosis to estimate the tension of the radial pulse; but it has been abundantly shown by the testimony of many competent observers that even the experienced finger is not infrequently led into wide errors in judging pulse tension. Such errors can be detected only by the use of instruments for measuring blood pressure. It is true that the information obtained by the use of these instruments cannot always be directly utilized for therapeutic purposes, yet its value, although not comparable to that of methods of examination such as inspection, palpation or urinalysis, is considerable when we take account of the *speed* with which an estimation of systolic blood pressure can be made. The time-factor can never be left out of sight. Relatively time-consuming methods, such as the counting of red blood corpuscles, or the cystoscopic examination of the bladder, can only be utilized in a comparatively small number of cases where the information to be derived from them is of the greatest importance. On the other hand, blood pressure measurements can be so quickly made that we are justified in using them, and indeed bound to use them, in a large proportion of our cases, even though it is true that the information they afford is relatively slight.

(*c*) *Cryoscopy* is not, I believe, of any considerable value in the diagnosis of medical, as contrasted with surgical, disease of the kidneys. It is a time-consuming and difficult procedure, and its results need to be interpreted with so much skill and caution that they do not recompense us for the labor involved.

(*d*) *The use of simultaneous tracings taken from the heart* and from one or another of the *peripheral blood vessels*, in the way especially popularized and recommended by MacKenzie, affords a great deal of interesting information, but not, so far as I can see, anything of any considerable value to the practising physician.

(*e*) In the *examination of sputa* we have progressed from the complex to the simple. Reduced to its essentials, sputum diagnosis means to-day a good look at the sputa in bulk, the judicious use of one's nose and the search for tubercle bacilli "early and often." Curschmann's spirals, Charcot-Leyden crystals, fibrinous casts, influenza bacilli yield no important clues for diagnosis, prognosis or treatment.

(*f*) To immerse the patient in a *warm bath during palpation of the belly* is a procedure which recommends itself, I think, more and more to those who have given it a trial.

In difficult cases the warmth may produce so much relaxation as to make it needless to resort to an anesthetic.

SUMMARY AND CONCLUSIONS.

1. The attempted distinction between laboratory methods and clinical methods of diagnosis is a false and misleading one. The attempt should be abandoned once for all. But the distinction between *experimental* research (in the laboratory or at the bed-side) and *applied diagnosis* is important.

2. The degree of exactness desirable in any technical procedure is relative to the end to be secured. We may easily have too much as well as too little exactness. But of clearness in the expression of our results we cannot have too much.

3. Modern physical diagnosis shows (among others) two dominant tendencies: (*a*) To seek and prize the most direct methods of examination. (*b*) To lay stress on the present functional efficiency of an organ rather than on the presence or appearance of anatomical lesions.

4. The old methods — inspection and palpation — are still the best.

Among recent additions to our technical resources three may be mentioned as likely to stand the test of time. These are:

(*a*) X-ray examination.

(*b*) Blood-pressure measurements.

(*c*) Palpation of the abdomen beneath the surface of a warm bath.

Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

TWENTY-FOURTH ANNUAL MEETING, HELD AT WASHINGTON, D. C., MAY 7, 8 AND 9, 1907.

THE meeting was called to order in the New Willard Hotel, by the President, DR. THOMAS DARLINGTON, of New York, May 7.

The President's address dealt with the source of pulmonary tuberculosis and its mode of infection. He believes that nostalgia is a great disadvantage in treatment at a distance from home. The good results at North Brother Island and at the Sea Breeze Hospital were noted. Typhoid fever and tuberculosis are much alike in the manner of implantation. The increase of heart disease was noted by charts and statistics were given from 1880 to 1905 for Boston, New York, Chicago, Philadelphia and ten other large cities in the United States. The most marked increase is shown in Boston, where the rate from heart disease was 11.71 in 1880 and 18.17 in 1905. New Orleans gives the greatest increase in the mortality due to Bright's, rising from 5.21 in 1881 to 17.30 in 1905.

Dr. Darlington believes that the vice of hard drinking is less prevalent than it was in the days gone by; drunkenness is less common, but stimulation is on the increase.

There is a growing tendency to promote the virtues of hygienic home treatment of tuberculosis at the expense of climatic treatment. The latter still has a most important place, but other methods are pushing to the front and must be considered.

The fresh air treatment of tuberculosis is not a formidable rival to the purely climatic cure. Without decrying my own city, it must be admitted that New York has a variable and most trying climate, yet we have a sanatorium for consumptives situated on North

Brother Island. This island stands at the junction of the East River and Long Island Sound, near that region very properly called Hell Gate. The climatic conditions at this point are distinctly unfavorable, and the patients received are mostly those afflicted with an advanced type of the disease. They are recruited from a class in whom good hygienic surroundings are at a discount; in fact, from the lowest strata of the "submerged tenth," yet the systematic routine of hospital existence, the outdoor life and good food give us results that are most encouraging. Apparently hopeless cases are being cured, and this is taking place despite climate, not with its aid.

The advantage of curing patients in the climate in which they must afterward live and the elimination of that most dreaded complication "nostalgia" are results of prime importance. No climate, however favorable, can avail much if homesickness develops, and the questions of the financial status of the patient and his future life are of too great significance to be overlooked. A contented mind is a therapeutic adjunct of the utmost value, as we all have had abundant opportunity to observe.

A study of the causative factors of this alarming increase naturally suggests the part played by the many so-called features of city life, and one of the most important factors in the relation of mental strain to the production of functional, followed by organic, lesions of the heart and subsequently the kidneys. The high-wrought, over-nervous activity of the modern city business man and the equally strenuous social whirl of the city woman; the mad rush of competition; the bustle, confusion, noise and unrest, so striking in comparison with the "*dolce far niente*" of the business and social life of a century ago; crowds and hurry; elevated stairs and "rapid fire" elevators; mental strain and physical bankruptcy — all seem so essential. They have come to be considered a striking characteristic of our national life; yet they are so deadly to our individual life that they furnish us with food for deep and earnest thought.

DR. SAMUEL A. FISK, formerly of Denver, now of Brimfield, Mass., presented a paper entitled

A SEARCH FOR A SUITABLE CLIMATE.

This account was largely personal and brought out the advantages and disadvantages of life in Colorado twenty-five years ago, before it became the Mecca for consumptives. Dr. Fish said that altitude *per se* is not a producer of hemorrhage of the lungs. He saw good results in cases of laryngeal tuberculosis, although the voice may be affected for years. Colorado climate must be used properly. It is not enough to simply get there, and then, metaphorically, draw a razor over one's throat by doing all sorts of imprudent things, which would not be entertained for a moment at home. But the climate rationally used is a great aid to the arrest and cure of most forms of phthisis.

DR. J. EDWARD STUBBERT: This seems to be in one sense an experience meeting; and, while I have never been in Colorado, I am extremely interested in Dr. Fisk's paper, from my own personal experience. I, also, was born in Massachusetts, near Boston. I also developed tuberculosis when seventeen. I was not sent to Colorado, was not sent across the Atlantic, but was sent to sea in the tropics. I came back with the disease, apparently, thoroughly arrested. Four years afterward I redeveloped it in New York City. The late Professor Loomis gave me three months to live. I spent short times in Lakewood, Atlantic City and in the Berkshires. I then went to China, where I stayed two years. There I lived in a climate where the sun shone five minutes in twenty-eight days. I came back from China and went South, where I stayed for a few months. I came back to New York City and then went to Central America, where I remained for five years. We all know what the climate of Central America is, showers from morning to night, with the sunshine in between. I then weighed 131 lbs. and now 186. Dr. Fisk and I, therefore, have two parallel cases, yet one went to Colorado and the other did not. One stayed at home and took short trips and the other took trips and went to Colorado. I have applied this rule to the treatment of many cases of tuberculosis, who had the means to travel and almost always with good results. Regarding a sea trip, I have crossed the North Atlantic many times, but would not send a patient there because of the necessity of being cooped up on the steamer. In almost every instance of what we call incipient tuberculosis, when I have sent patients to the South on a sea trip, they have recovered, for they could live and even sleep on deck. It seems to me that for our *patients* we should prescribe an out-of-door life and change rather than any specific climate.

DR. V. Y. BOWDITCH: In 1890, at the meeting of this Association in Denver, I said that if I were threatened with tuberculosis, I would make my way to Colorado as quickly as possible and I have had no reason to change that opinion since, unless it be, possibly, that with the lapse of years I prefered to die earlier at home. I desire now merely to put myself upon record to this effect. We now have advanced methods of home treatment for the vast number of patients who cannot go away. Every case should be judged upon its own merits. I still believe that under certain conditions the more radical change *is much* the wiser method.

DR. DELANCEY ROCHESTER, of Buffalo: I am interested in this matter of sending patients to different climates, and from my experience I have come to realize that there are two places to which we may with advantage send them, — Colorado and North Carolina. If I cannot send them to either of these two places, I do the next best thing in substituting the mountains around my home and in the Adirondacks. My last resort is to employ the home treatment in Buffalo. We ought not to try to substitute the home treatment of tuberculosis for the climatic treatment when we find such excellent results from the latter treatment.

DR. FISK: I do not want to take issue with Dr. Barlow, except to say that when we were in Southern California in 1902, one night at Redlands, I hung my clothes near an open window and they were so damp the next morning that I thought I would take cold.

DR. JUDSON DALAND read a paper on

ASSAM FEVER OR LEISHMAN — DONOVAN DISEASE.

This disease has until a few years ago been supposed to be confined to Assam and the Madras region, but recently it has been observed in Egypt and Arabia. The newness of the identification of this disease is such as to make it not impossible that we may find cases in our own states, or in the West Indies. There has been no case yet under my notice except those mentioned. The most important point of the paper is the fact that this organism is specific and peculiar to Kala azar and only found there. Last June the first successful observation was made regarding the feeding of the Kala azar to the bedbug, and the discovery of the entire cycle within the bedbug demonstrated the fact that the bedbug was the normal alternate host.

DR. JOHN W. BRANNAN, of New York, read a paper on

AIX-LES-BAINS.

The season is from May to October. From the latter part of August to the middle of September Dr. Brannan found it quite warm enough to discourage any exertion,

necessitating the advice to "laze and loaf." The waters have a temperature of 111° F. (44° C.) and contain carbonates and sulphates of lime, soda and magnesia, as well as barégine. The douche massage was described. The bathing room is equipped with two kinds of hose carrying water tempered to the desired degree. In one the water is under very high pressure and is used for douching the extremities; in the other it is under slight pressure and is applied to the back and the body. One doucher is placed in front and the other behind the patient, each provided with a flexible hose discharging great volumes of water in such a way that he can at will direct the water under high pressure, upon the different extremities, leaving both hands free for simultaneous massage of the muscles and joints. The other man gives attention to the back of the neck, shoulders and body. This process lasts eight to ten minutes and the water varies from 35° C. to 42° C. in different cases. The patient is carried back in a sedan chair to his room. Not much stress is laid upon a restricted diet by the physicians, except in gouty patients. Contra-indications are organic disease of the kidneys and liver and valvular disease of the heart with imperfect compensation. Comparison was made with Hot Springs, Virginia, whose waters are similar.

DR. F. CREIGHTON WELLMAN, of Benguella, West Africa, a corresponding member, sent a paper on the

CLIMATE, NATURAL HISTORY AND DISEASE INCIDENCE OF THE ANGOLA HIGHLANDS.

(Read by title.)

DR. PAUL M. CARRINGTON, surgeon in the Public Health and Marine-Hospital Service of the United States, presented a paper on the

CLIMATE OF NEW MEXICO.

This paper contains data on all the important stations in the territory and particularly of Fort Stanton, where Dr. Carrington has been stationed for over six years.

DR. FREMONT-SMITH, of Washington, D. C., read a paper on the

EFFECT OF FLORIDA CLIMATE UPON ACUTE AND CHRONIC DISEASE.

Having practised several winters at Palm Beach and St. Augustine, the author gave personal experience of the climate in its relation to disease. The frosts seem to be more severe of late than in previous years. The cold waves usually last about three days, followed by fair, sunny weather. The climate of St. Augustine or Ormond is not dry, nor is that of Florida in any part. It is moderately humid. St. Augustine stands upon a neck of land surrounded by the water of the sea, but separated from the open ocean by a narrow island forming the harbor. An account was given of the outbreak of typhoid fever at St. Augustine in 1902. Both Palm Beach and Miami are usually below the frost line. In 1899 the temperature fell once at Palm Beach to 33° F.; in 1906, to 25° F.; in 1907, to 28°. During each season there are at least three or four cold waves, sufficiently severe to render warm clothing and careful protection of the delicate imperative.

Dr. Smith then took up the incidence of dysentery, malaria and pneumonia and showed that they are rare. A good word was spoken for Nassau in the Bahama Islands.

DR. J. EDWARD STUBBERT read a paper on

SANITATION IN PANAMA,

and showed a series of lantern slides in illustration. Dr. Stebbert said that one cause of the great sickness that existed during the French régime was the filth and rank vegetation that covered the isthmus from one end of the line to the other. The situation of Colon was so low as not to permit of drainage. Street and house sanitation was carried out by Colonel Gorgas. Reservoirs were built; the Ancon Hospital was overhauled and mosquito bars supplied, subsidiary hospitals were established. Malaria runs a more rapid course than in the United States. Dr. Stubbert referred to a noted writer, who spent about eighteen or twenty hours on the isthmus, and then wrote a scathing article regarding its sanitary conditions. A picture was then shown of the reservoir supplying Colon, which this writer said did not exist, but which was there at the time of his visit. So greatly have the conditions been improved that in 1906 only 28 per 1,000 were on the sick list. The ratio of deaths per thousand was 41. There are now 87 physicians in the sanitary department, with 9 hospitals and one sanitarium.

DR. STUBBERT: In reference to the report of the death-rate on the Isthmus, I would like to say that I kept very careful records of the Nicaragua, Cuba and Panama death-rate. The official death-rate of Panama has never been tabulated. The death-rate on the Isthmus was enormous during the French *régime*. At Nicaragua it was .7 of 1%.

DR. J. M. ANDERS, of Philadelphia, read a paper entitled

A PRELIMINARY STUDY OF HEMOPTYSIS DUE TO TUBERCULOSIS.

Subdivisions were made into cases occasioned by either congestion of the bronchial mucosa and lung texture, or ulceration or erosion of vessels, or rupture of miliary aneurisms. He questioned whether, in point of intensity, the hyperemia of early pulmonary tuberculosis is equal to that of many other acute and chronic diseases of the lungs, in which the tendency to free bleeding is decidedly less marked. It is probable that minute areas of necrosis are responsible for these early hemorrhages. Chronic valvulitis affecting the mitral segments in cases of pulmonary tuberculosis is a cause of hyperemia and congestive bronchitis. Tables showing the relation of age, sex and seasonal influence were exhibited.

Dr. Anders believes that residence far removed from the seacoast is best for patients suffering from hemoptysis. Rarefied, dry air is best. Coughing must be controlled and hot and alcohol drinks forbidden. Aconite in one-drop dose every third hour is advised.

DR. E. O. OTIS, of Boston, read a paper on

THE BLOOD PRESSURE AS A GUIDE IN THE TREATMENT OF HEMOPTYSIS.

The severer hemorrhages were not considered, but rather the less severe cases occurring generally in the earlier stages of the disease and chiefly the recurrent or persistent forms. A Janeway sphygmomanometer with a wide cuff was employed, and the nurses at the Massachusetts State Hospital at Rutland were instructed in its use. The standard blood pressure for each case was established and was found to be 126 for men and 120 for women. In 18 recurrent cases, when the pressure was found high, the nitrites were given; when low, ergot was used. Ergot is too slow, however, to produce immediate results.

DR. DELANCEY ROCHESTER: From observations which we have been making upon blood pressure, I am convinced of the very slight effect of drugs of any sort in reducing blood pressure and of the very temporary effect of any of them. We have had cases of diseases of the kidney and of advanced arteriosclerosis, in which there was high blood pressure. In one case the blood pressure rose to 255 and then the instrument broke; how much higher it would have registered I do not know. No drug used in that case had any effect,

and in a number of other cases nothing but the nitroglycerin in solution made any impression upon the blood pressure. The effect of this was only for ten minutes, when there would be a fall of from 20 to 30 points and then it would rise again. The nitroglycerin in tablet had no effect. The amyl and various other nitrites were of no use at all. Sweating induced by hot air and steam baths and by hot foot baths, regulation of diet and use of purgatives were of some value.

DR. FISK: I desire to express my appreciation of Dr. Otis's paper and to suggest the beneficial effects of fresh air in coagulating the blood and of calomel in diminishing blood pressure.

DR. THOMAS A. CLAYTOR: I want to substantiate what Dr. Rochester has said about drugs having no effect in the reduction of blood pressure. Nitroglycerin and the nitrites have been of little value in my hands. Potassium iodide given over long periods has had rather more effect. Rest, diet and purgation have been about the only satisfactory methods in my hands of reducing blood pressure.

DR. FREMONT-SMITH: The value of the nitrites seems to lie principally in releasing the local spasm of blood vessels in which high tension exists. The nitrite of sodium and nitroglycerin in the neuralgias of various types dependent apparently upon local spasm of sclerosed blood vessels of are great value, as in certain headaches and in angina pectoris.

DR. R. H. BABCOCK: This paper is extremely interesting and suggestive. I was much struck with the fact that the average blood pressure in these cases was moderately high, — 126 mm., with the Janeway instrument. Most of us have had the impression that blood pressure in tuberculous patients is usually toward the lower reading. I agree that the nitrites and remedies of that sort do not materially lower blood pressue. I should suggest that, if in any case of hemoptysis the blood pressure were high, the measures to reduce it in addition to rest would be such measures as quiet heart action, because patients with hemoptysis are more or less excited or disturbed by reason of the symptom, and an excitement on the part of the heart raises the systolic blood pressure. Therefore, such measures as rest, morphine and gentle purgation would certainly be indicated in these cases. Where blood pressure is extremely low I should question the effect of ergot, believing that measures such as abdominal pressure or ligation of the extremities would really be more efficacious than the administration of ergot. I believe, indeed, that even digitalis would be of great benefit. Dr. Otis will see that I am still unconvinced as to the advantage of ergot in cases of pulmonary hemoptysis.

DR. THOMAS DARLINGTON: Not bearing directly upon the question of blood pressure, but upon the matter of nitroglycerin, I would like to say that within the last year the Department of Health made many analyses of tablets of nitroglycerin and in many instances the amount present in the tablets was so small as to be practically useless.

Another point in connection with nitroglycerin and of which I made some investigation over twenty years ago, is that in cases of poisoning by nitroglycerin it was found that ammonia immediately restores the color to nitrite poisoned blood; that is, ammonia with nitroglycerin is incompatible.

DR. OTIS: One of my objects in presenting these observations was to compare our experience with that of others, so as to obtain further light upon the relation of hemoptysis and blood pressure and thus, perhaps, arrive at something more definite and precise in treatment. Hemoptysis is not an uncommon occurrence; often persistent and recurrent, extending over weeks and months. I earnestly hope that others who see many cases in sanatoria or in private practice will observe the relation between blood pressure and hemorrhage and report their results. We may find that ergot still has its place in the treatment of hemoptysis.

DR. F. M. POTTENGER, of Los Angeles and Monrovia, Cal., read a paper on

THE RELATIVE VALUE OF HIGH AND LOW ALTITUDE IN THE TREATMENT OF TUBERCULOSIS.

Dr. Pottenger acknowledges that men are very much influenced by their surroundings and hence the difference of opinion on this question. After depicting the unfortunate condition of those who are sent to remote regions without proper means or safeguards, he made the proposition that a climate making great demands on metabolic processes requires a hardy man to endure it. Elevated climates fall in this class, are variable with seasons, and while the young and robust are particularly suited to such conditions, those in advancing years should be spared the excessive demand for tissue change. Rest is the better method of treatment of pulmonary tuberculosis.

DR. W. JARVIS BARLOW, of Los Angeles, reported on

TWO HUNDRED CHARITY CASES OF PULMONARY TUBERCULOSIS UNDER SANATORIUM TREATMENT AT LOS ANGELES.

Ninety-two per cent of the cases were beyond the first stage; they were mostly refined people reduced in circumstances. The paper showed very clearly that good results may be sometimes obtained by properly caring for those advanced in the disease. One is often astonished at what an improvement an advanced case, given up, makes when conditions have been made favorable. It is difficult to estimate the lives that may be saved by isolating these poor advanced cases, who are shut out from most of the charitable sanatoria. These 200 cases were treated during three and a half years. Raw eggs and olive oil are given to each patient. The oil is less expensive than cream.

Advanced cases are given a trial of three months and if the case showed progression, arrangements are made to send the patients to a place where family or friends can care for them. Many are sent back to the East. Advanced cases which make a marked improvement and begin to have normal temperatures are placed in cottages, so that, irrespective of the stage, there is no difference made in the cases doing well.

The problem of after-care was discussed and Dr. Barlow said that if financial conditions and housing capacity were larger, the ultimate results would seem to justify the indefinite care of undesirable cases.

Of the first 100 cases 93 showed on admission the second and third stages. Sixty-two per cent showed progression or died; 37% improved. Of the second 100 cases 91 were admitted in the second and third stages; 45% showed progression, or died; 55% improved.

DR. CHARLES DENISON, of Denver, exhibited a model of a "sleeping canopy," designed to afford tent advantages indoors and showed photographs of its adjustment.

Believing that deficient ventilation is responsible for most of our tuberculosis, great stress was laid on the susceptibility of the individual, and the need of fortifying the system and dispelling unreasonable fears. A camper in the Rocky Mountains can get so inured to the drafty air that he can sleep on the ground with the wind blowing 20 to 40 miles an hour and not think of "catching cold." So a sleeper, by having warm enough coverings on the bed and a thick woolen hood on the head in winter, or a light soft night-cap in milder

weather, can so temper the air movement that no danger of catching cold will result. The canopy is made of denim. Specifications and drawings were shown.

Dr. Richard Cole Newton, of Montclair, N. J., read a paper on

PERSONAL HYGIENE IN THE PREVENTION OF CONSUMPTION.

The lesson was drawn chiefly from the experience with our American Indians during the last thirty years. While they are not inherently more liable to infection with tuberculosis than is a white man under like circumstances, their exceedingly filthy habits and fondness for liquor and unventilated dwellings make the mortality from phthisis great. In the nomadic life they had new locations every little while, but in permanent quarters filth keeps accumulating. In the same region, where the white man suffers least from tuberculosis, the Indian sickens and dies. An analogy between the Indians and negroes was drawn. Experienced army officers say that the red man is gradually becoming weaker and more prone to sickness. Infection plays a secondary part in the production of consumption and so does heredity. The principal cause is a man's life habits.

Dr. Arthur K. Stone and Dr. Cleaveland Floyd, of Boston, read a paper on the

DAILY CARE OF CONSUMPTIVES AT A GENERAL HOSPITAL AS AN AID IN SOLVING LOCAL TUBERCULOSIS PROBLEMS.

Statement of the experiment of the House of the Good Samaritan in the care of ambulatory cases of tuberculosis; daily medical supervision; out-door treatment; good food; home supervision. Twenty-five patients thus cared for with small addition to the administration force of the hospital; cost per patient, very small; results, good. [To appear in this Journal.]

Dr. F. I. Knight, of Boston, read a paper on

THE IMPORTANCE OF SUPERVISION OF PATIENTS AFTER LEAVING SANATORIA APPARENTLY CURED OF TUBERCULOSIS.

[See a future issue of this Journal.]

Dr. Vincent Y. Bowditch, of Boston, and Dr. Walter A. Griffin, of Sharon, read a paper on

SUBSEQUENT HISTORIES OF ONE HUNDRED AND SIXTY "ARRESTED CASES" OF PULMONARY TUBERCULOSIS TREATED AT THE SHARON SANATORIUM.

[See a future issue of this Journal.]

DISCUSSION OF PAPERS OF DR. BARLOW, DR. POTTENGER, DR. DENISON, DR. NEWTON, DR. STONE AND DR. KNIGHT.

Dr. J. M. Anders: I was very glad to hear Dr. Barlow speak in favor of the treatment of advanced cases of pulmonary tuberculosis. I think there is too much inclination to abandon active measures in this class of cases, whilst, as a matter of fact, they are occasionally savable. In 1900 I read a paper before this Association, in which I took the position that the tuberculin test was absolutely reliable as a diagnostic measure. I am not surprised to hear Dr. Bowditch say that finding the tubercle bacillus is, perhaps, after all, the only reliable diagnostic test. In 1900 the consensus of opinion seemed to be in favor of the opinion before mentioned. Since that time, however, I have had occasion to change my mind a bit in regard to this question, because I find that while we get typical and unmistakable reactions, as a rule, in rare cases, we cannot eliminate intervening conditions; and the subsequent course of two of my cases proved them to be something else than tuberculosis. The tuberculin test is, however, an almost absolute sign of the existence of tuberculosis. The question of a close observation of cases after returning home from sanatoria is one of the greatest practical importance, especially to the general practitioner. I fear that the latter is too much inclined to either discharge these patients when they return from sanatoria apparently cured, or allow them to use their own judgment as to whether they need further treatment or not. No fact is better established and this was brought forward in the papers read here this morning, than that temporary arrest and even apparent cure is often followed by fresh exacerbations without obviously existing cause. It seems to be a part of the natural history or course of the disease. We fail in our plain duty when we fail to keep in touch with these patients after their return from sanatoria. In all cases in which I have been able to keep them under supervision, the necessity for such a course soon became apparent. As stated by Dr. Knight, when they return to their home environment resistance becomes lowered and they are especially susceptible to intercurrent attacks of bronchitis and influenza, and, more than this, if the latter is not properly handled, it will lead to a relapse of the original disease. The same fact is recognized with reference to cases of pleuro-effusion that are apparently cured; they often merge into pulmonary tuberculosis subsequently. These convalescents also require close supervision, being, for the most part, tuberculous subjects, and I think it is a reproach to the medical profession that so many cases of apparently healed pleuro-effusion are allowed to develop into pulmonary tuberculosis. If there were maintained a state of high physical health and efficiency this sequel would be, to a large extent, prevented.

Dr. Delancey Rochester: I desire to enter my protest against the position of Dr. Bowditch and Dr. Anders, that the tubercle bacilli are absolutely necessary for the diagnosis of tuberculosis, or that the presence of the bacilli is the only ultimate test of the presence of tuberculosis. I feel that we can diagnose tuberculosis of the lungs and be sure of it without the presence of the bacilli and without the tuberculin test. It is not necessary to go into details as to methods, but I am perfectly sure, however, that we can make an absolutely sure diagnosis without this method.

With reference to Dr. Stone's statement that their patients were supplied with cloth bags, in which were rubber bags supplied with paper napkins and that the bag could be disinfected after the napkins were destroyed, some one has suggested that the bags be of paper. They could be bought for a few cents and could be destroyed every day.

I think in the matter of nourishment between meals, Dr. Minor's point is very well taken. I instruct my patients in business to have milk delivered to them at the office, or to take it from home with two or three eggs mixed with it before leaving home.

Dr. E. O. Otis: The subsequent career of sanatorium patients who are discharged with their disease arrested is a very serious question and deserves careful consideration. With the increase of sanatoria throughout the country and consequent increase of discharged patients, the problem of what to do with them so that they may remain cured and be capable of remunerative work becomes insistent. The farm colony that has been proposed is one solution of the problem and offers many possibilities. It might naturally become an annex to the sanatorium and discharged patients could become hardened and "the cure" made more permanent, so that subsequently they could return to their occupations in the city under favorable conditions of work, or be placed in the country in different positions, where they could lead an outdoor life. The first farm colony of this kind to be inaugurated as far as I know in this country is at the Stony Wold Sanatorium, at

Lake Kushaqua, in the Adirondack Mountains, under the supervision of its founder, Mrs. James E. Newcomb, of New York.

DR. THOMAS W. HARVEY: I think that the literature which we have been receiving on tuberculosis, while it allows of the influence of the bacillus as a cause, gives much evidence of the prevalence in the minds of many medical men that the principal reason for the continuance of the disease is the presence of the general practitioner. He does not recognize the disease early enough, wants to keep it under his care, or sends it to the wrong place or sends it at the wrong time. The problem of the advice to be given concerning the immediate treatment of early cases of tuberculosis is almost as important as the question of their care after treatment in sanatoria. There are several elements in this question which I have seldom seen discussed. First, in choosing between treatment away from home and treatment at home, the question of sex is most important. Of the tuberculous patients whom I have had to advise in the early course of the disease, I have found that the women can be taken care of very often at home, but I have yet to see the man whom I have been able to take care of at home. That is due particularly, I think, to the fact that he is the money-earner. Even among the well-to-do the women can be taken care of better at home than can the men, in a percentage of ten to one. Second, the question of temperament. There are some men who will not submit to the discipline of sanatoria and have gone off by themselves and succeeded better. While the discipline received at sanatoria is most valuable to themselves, to their families and to the community, there are individuals upon whom it seems to have an antagonistic effect.

DR. LEONARD WEBER, New York City: I believe if there is any disease common to man, the development of which depends on social conditions, it is tuberculosis, particularly tuberculosis of the lungs. It is true that by sanatorium treatment, public and private, by home treatment and by hygienic measures, much has been accomplished, but few cases of permanent cure of pulmonary tuberculosis occur and we shall stay far from curing until we find a specific remedy. We are accustomed to look at the tuberculous man only, tell him what he should and should not do, and to the working man how to live in order not to get tuberculosis; but I think this society must also look at the other man who is responsible to a very large extent. I mean by that, those men who run factories over time, who employ child labor, organize and run sweat shops; who build miserable tenement houses, get high rents and give little air and sunshine for it, together with all the other unhealthful conditions which lay the foundation for tubercular disease, not only in the feeble but in the rugged. The employer of labor, the builder of tenements and the owner of houses in unsanitary conditions ought to be looked after; they often need admonition and instruction and restraint to prevent infection and spread of tubercular disease.

DR. BOWDITCH: I am very glad that Dr. Rochester brought up the question of diagnosis without the presence of tubercle bacilli in the sputum. It only shows that when one has a distinct impression in his own mind, he often fails to impart it to others. I would be willing to stake whatever reputation I may have had upon the truth of my diagnosis, simply from the history and from the physical signs alone. What I intended to say in my paper was that the tuberculin test had been given in certain cases in which bacilli were not found simply as an additional proof of a previous diagnosis, in order to convince the "doubting Thomases" that tubercular disease was present. At the same time I meant to state that the final convincing proof of the presence of tuberculosis is shown in the appearance of bacilli in the sputum.

DR. PHILIP MARVEL, of Atlantic City, reported

TWO CASES OF PAROXYSMAL TACHYCARDIA, WITH BRIEF REFERENCES TO OTHER CASES ALREADY REPORTED.

CASE I was that of a woman aged forty-eight, who had seizures in which faintness and oppression in the chest were prominent symptoms. These recurred every month or six weeks. Dr. Marvel saw her in an attack of indigestion with severe cramplike pains in the abdomen, a dysenteric diarrhea, with considerable tenesmus and nausea, following a hearty meal, including crabs and oysters; after which she remained in the surf almost continuously for two hours. Her temperature was subnormal and she was pallid, with colorless lips. Dr. Marvel used external heat, enteroclysis, morphia hypodermically with digitalis later. The pulse had then risen to 192 by the following day. On the third day she had recovered.

CASE II was that of a physician aged fifty-five, who was convalescent from grippe. Two weeks after arrival at Atlantic City, he was seized with a night attack of "over-action of the heart," as he expressed it. The pulse was about 200, feeble and accompanied by a sense of oppression and fullness about the cardiac region. These attacks had occurred during three years and occasioned great apprehension and extreme anxiety. A hypodermic of morphia allayed his fear, although the rate of the heart continued rapid. In a fortnight he had another attack and after three more weeks another very severe one, the pulse rising to 210. He had an attack of nephritic colic two weeks later and seven months after an operation for calculus of the kidney; he died of pneumonia.

DR. JAY PERKINS, Providence, read a paper on

CARCINOMA OF THE MEDIASTINUM SIMULATING ANEURISM.

A miner, thirty-three years of age, who for several years had worked hard in the Klondike, suddenly developed marked enlargement of the neck, followed by dilatation of the superficial veins of the whole body, accompanied by double murmur at aorta and later great enlargement of area of cardiac dullness, including dullness over whole of sternum, lower right chest (and before death whole right chest), and some enlargement of glands above right clavicle and in right axilla, x-rays showing pulsating mass to left of spine at arch of aorta.

Autopsy: Small carcinomatous growth pressing on superior vena cava; large carcinomatous growth under upper part of sternum; tuberculous infiltration of right lung. Heart and aorta normal.

DR. THOMAS A. CLAYTOR, Washington, D. C., read a paper on

DILATATION OF THE HEART.

After considering the many cases of cardiac dilatation in which we can find a definite and tangible cause, there still remains a fairly large class in which we are not able to find any perfectly satisfactory explanation. We must fall back on the nervous system and say that the cause is loss of muscular tone.

Dr. Claytor cited a case of a lawyer who, though well advanced in years, had always been a man of remarkable vigor, who brought on the symptoms of a dilatation by the preparation of a long and important brief. He had just concluded his arduous task when he was suddenly seized with dyspnea and oppression in the cardiac region. Dr. Claytor found the heart considerably enlarged, acting very irregularly and a

mitral systolic murmur present, but it was not determined whether this was due to a true valvular lesion or to a relative insufficiency from dilatation, as the patient fortunately recovered.

In another case, that of a woman aged forty, who for a long time had the physical signs of a mitral stenosis and then developed a broncho pneumonia, with a very harassing cough. After a few days of constant coughing, marked orthopnea with edema of the lungs developed. Examination showed a loud systolic murmur in the tricuspid area, in addition to the pre-existing mitral stenotic bruit; caffeine in liberal doses gave fairly prompt relief and the wall of the right ventricle so far regained its tone that the systolic murmur was soon scarcely audible.

DR. CHARLES E. QUIMBY read a paper on

SOME MANIFESTATIONS OF ARTERIAL TENSION.

Dr. Quimby said that arterial tension, excluding syphilis and alcohol, is always a functional, not organic, condition, at first; a result and symptom, not a primary or direct cause. It is a symptom common to, and the only common symptoms of, many diverse and apparently unrelated (so-called) diseases. As such it points to their dependence upon a common cause, however diverse the symptom-complex; and thereby leads to recognition of the fundamental cause, with appropriate treatment. Illustrative cases.

DR. HOWARD S. ANDERS, Philadelphia, presented a paper on

INFLUENZA AND WEATHER INSTABILITY.

Medical history is generally meager in meteorologic studies as related to most diseases, even in those which give *prima facie* evidence of being affected by meteorologic states. Tuberculosis is a partial exception. Epidemic influenza also. Writer's initial and serial studies since 1899. Recent recurrence of influenza in winter of 1906-7. Conclusions from former studies. Data and inferences from latest phenomena. Day-by-day weather instability and frequency and extremity of changes probably more to blame for susceptibility to influenza and its virulence than is shown by any study of monthly averages of barometric, thermometric, hygrometric, or sunshine percentage readings.

At the business meeting a memorial of the late Dr. S. E. Solly, of Colorado Springs, was read by DR. JAMES A. HART; a memorial of the late Gen. Charles H. Alden, U. S. A., by DR. ROLAND G. CURTIN; a memorial of the late Dr. W. C. Glasgow, of St. Louis, by DR. GUY HINSDALE.

The following officers were elected for 1908: President, Dr. Thomas D. Coleman, Augusta; Vice-Presidents, Dr. Judson Daland, Philadelphia, and Dr. Charles Fox Gardiner, Colorado Springs; Secretary and Treasurer, Dr. Guy Hinsdale, Virginia Hot Springs; Member of Council, Dr. Thomas Darlington, New York.

Next place of meeting, Boston, June, 1908.

Book Reviews.

Treatment of Skin Cancers. By W. S. GOTTHEIL, M.D. Third edition. Revised and enlarged. International Journal of Surgery Company. New York.

In this third edition of Gottheil's little book, the chapters on treatment have been entirely rewritten and more than doubled in amount. Special attention has been paid to the subjects of the x-ray, radium and the high tension current in the treatment of skin cancers. The claims of arsenic as a therapeutic agent are still highly extolled.

Indigestion. By GEORGE HERSCHELL, M.D., London. Third edition. 282 pages. Entirely rewritten. Chicago: W. T. Keener & Co.

A text-book devoted to the diagnosis and treatment of the functional derangements of the stomach. A new section has been introduced in this edition which takes up the selection and preparation of food for dypsepties.

Essentials of Diseases of the Skin. By HENRY W. STELWAGON, M.D., Ph.D. Fourth edition, thoroughly revised. Philadelphia: W. B. Saunders Company.

In this fourth edition of Stelwagon's "Question Compend," the entire book has been subjected to a careful scrutiny and revision. Several of the more rare affections, such as blastomycetic dermatitis and hydroa vacciniforme, have been described.

Manual of Operative Surgery. By JOHN FAIRBAIRN BINNIE, A.M., C.M. (Aberdeen), Professor of Surgery, Kansas State University, Fellow of the American Surgical Association, etc. Third edition, revised and enlarged; with 678 illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

Binnie makes an apology for this third edition, but no apology is needed. Since the first edition was issued some four years ago, we have regarded this book as the best manual of operative surgery published in the English language. In his writing of scientific English Binnie displays two admirable traits, — he quotes profusely and comprehendingly from other writers, and he punctuates their conclusions with searching practical suggestions of his own. He is a tireless reader, who searches the literature. He is a helpful and stimulating writer who presents facts in such a fashion that he who runs may read. Again, without hesitation, cheerfully and confidently we commend this book to operating surgeons.

Post-Operative Treatment. By NATHAN CLARK MORSE, A.B., M.D., of Eldora, Iowa. Second edition, revised and enlarged. Containing 5 plates and 175 other illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

This second edition of Morse's useful book, following close upon the first, suggests the popularity of the writing and the need of such a work. The new edition is some thirty pages longer than the first, but essentially it is a reproduction of the book as published two years ago.

For the general practitioner and busy surgical assistant this book must be of service. Morse does not pretend to give us an elaborate original essay on post-operative treatment. His pages are filled with carefully selected extracts from the writings of others, and occasionally his own preferences are expressed.

The publishers have done their work well. The letter press and illustrations are good.

THE BOSTON

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BOSTON CONSUMPTIVES' HOSPITAL.

ALTHOUGH not widely advertised, the work of the Boston Consumptives' Hospital Trustees has been extremely active since their appointment as a board. As is generally known, land has been secured in Mattapan for the proposed tuberculosis hospital and measures are being taken to construct buildings as speedily as possible for the reception of patients. In the meantime, however, the board has turned its attention to matters of equal if not greater importance in its efforts to combat the disease by methods which accumulating experience has approved.

A step of great significance is the establishment of a dispensary or out-patient department in the city proper, which it is expected will be open for the reception of ambulatory patients early in September, if not before that date. For this purpose the property at 13 Burroughs Place has been secured, and is being equipped with all that is necessary for the complete examination of patients who may present themselves. In connection with this dispensary there will be a laboratory in which bacteriological work, and such other as relates to the problem of tuberculosis may be efficiently carried on. Dr. W. T. Councilman has been appointed pathologist to the dispensary, and the staff of physicians, under the headship of Dr. E. A. Locke, is ready to undertake the work which the proper conduct of the dispensary will entail. The hospital, which is as yet unconstructed, and this out-patient department are both to be under the superintendence of Dr. Simon F. Cox, whose admirable service in connection with the Long Island Hospital will be remembered.

It is the intention of the trustees to open this dispensary at first several mornings a week, and later, as the demand comes, to make it available also afternoons and evenings. The essential idea is to get as near the real tuberculosis problem in this city as is possible. To this end homes will be visited by a nurse who will be capable of examining into the conditions and instructing families in such measures against the disease as may be necessary. Milk, eggs and proper food in general are to be supplied to the sick, and, when necessary, to those of the family who may still be free from the disease. When the home is found not to be hygienic, assistance will be given in finding a more suitable place of residence. It is furthermore expected that families will be examined for tuberculosis or other diseases and referred to the proper country homes or hospitals, as the situation may demand. Cases are to be tabulated by families, by houses and mapped out by streets. Perhaps more important than all the other measures which we have suggested will be the attempt to eradicate the sources of contagion, which it is now generally acknowledged are the late cases which have hitherto found scanty consideration in our combat against the disease. The class work instituted by Dr. J. H. Pratt in this city will be further developed and taken up on a considerably larger scale than has hitherto been possible.

From the foregoing it appears that the trustees have conceived the admirable idea of constituting this out-patient department in the city proper a clearing house, as it were, for all cases of tuberculosis at whatever stage of the disease they may be. The design of the hospital at Mattapan is to care for the chronic and in great measure hopeless cases throughout the city; but this most important work does not in the least preclude the effort toward proper classification, which is eminently desirable in the present state of the problem. If it could be generally understood that this out-patient department in Boston is the tuberculosis center, where all cases may present themselves for examination and as a preliminary to their proper disposition thereafter, it is evident that a policy of centralization would be organized which would be of the greatest possible significance and value. At present, for example, applicants for the State Sanatorium at Rutland are examined at the Massachusetts General Hospital and other places in the city. The new plan, if carried out, would obviate this necessity, since all such patients could be examined at the new out-patient department at great economy of time and the avoidance of possible confusion. The management, also, of the special Boston

hospital, although itself caring for a very small proportion of the patients seen, would come to have an increasingly accurate knowledge and control of the entire tuberculosis situation throughout the city, which would naturally be a source of increased efficiency.

It is not to be questioned that the Board of Consumptives' Hospital Trustees has inaugurated a wise and feasible plan and placed its execution in most competent medical hands. It will naturally take both time and accumulated experience before so comprehensive a scheme can reach the stage of complete efficiency, but with the co-operation of hospitals, special societies and individuals it is not to be doubted that the centralization which is evidently desirable will in time be accomplished. We cordially commend the plan as we understand it in all its bearings.

LABORATORIES IN THE MEDICAL CLINIC.

The growing complexity of clinical medicine is well shown by the progressive development of the laboratories of a modern clinic of medicine. A comparatively few years ago the equipment of a clinical laboratory consisted of hardly more than a few test tubes, a half dozen bottles of reagents and a microscope, and these were amply sufficient for the demands coming from the bedside. The advent of bacteriology and its attendant methods of serum diagnosis brought a more extensive laboratory techinque into routine usage. Since those days the laboratory as an adjunct of the medical clinic has extended its scope much, so that now the modern clinic, to be well equipped for the routine study of cases and for clinical investigation, must possess a complex laboratory plant, where may be applied the methods of physiology, chemistry, bacteriology, pathology, physics and biology.

The attempt to meet these demands in this country has been made for the most part through the pathological laboratory with subsidiary departments of bacteriology, clinical pathology or chemistry in individual cases. By this means much valuable work has been done, but in most cases there has been an appreciable gap between the clinic and the laboratory, due to the fact that the pathologist at present in charge of most of these laboratories is not a clinician and so not accustomed to see the clinical aspect of possible problems. Thus the problems arising from the clinic are apt to be overlooked, or not fully appreciated. This may be said without belittling the work of the pathologist, for he has a definite place in the hospital equipment, with many fields of activity, which he has or is still working productively.

There is, however, gradually growing in America the idea of the laboratory of clinical medicine, directed by a head primarily a clinician, dominated by the problems of the clinic, peopled by those in training for clinical work and having the aid of men specially trained in chemistry, biology and physics. A recent number of the *Johns Hopkins Hospital Bulletin* (June–July, 1907) has a description of the laboratory organization of that hospital, which is of interest in this connection, with its subdivisions into a general clinical laboratory, a biological laboratory, a physiological laboratory and a biochemical laboratory, each with its own head. The chief features of this laboratory group are their compact organization, close association with the wards and the possibility of the solution of a wide range of clinical problems. The eighteen contributions from these laboratories which follow the introductory description of the organization and equipment show well the desirability of such a plant, though in type the inspiring enthusiasm of such a group of workers is inadequately shown; that can only be appreciated in a visit to a clinic of medicine so organized. In Germany such laboratories for some time have been adjuncts of the better medical clinics and explain in good part their activity in medical investigation. It is gratifying to see a similar development begin in America.

CONFERENCE ON SLEEPING SICKNESS.

An international conference on sleeping sickness has recently been held in London. Although this disease is peculiar to Africa, there is evidence that through the increase of communication between tropical and semi-tropical countries a spread of the disease is likely. This has, in fact, already occurred to a considerable and somewhat alarming extent. It has appeared on the Egyptian Soudan on the north, has entered Rhodesia and is threatening Zululand. White men are not immune, and it is not as yet understood exactly what climatic conditions are essential for the life and propagation of the fly which is apparently the temporary host of the germ of the disease. It is known that the fly haunts regions rich in water and foliage such as are found in tropical countries, and it is a matter of apprehension lest the flies be carried into those regions where white settlements are situated. If this should occur, it is feared that the progress of the

disease would be extremely rapid owing to the lack of immunity of the white races. The fatality of the disease is hardly appreciated by those who have not been brought into intimate contact with it. In epidemic form it is said to be more destructive than any other disease known. In Uganda, for example, which is the most infected area, it is stated that, out of a total population of 300,000, 200,000 have died. In view of these facts, it is apparent that the investigation of the disease, already well advanced, should be prosecuted with the greatest possible vigor. It is established that an animal parasite is the cause of the disease, which has been named Trypanosoma Gambiense, and that this parasite is presumably injected by the bite of a certain fly. Whether or not this fly is the sole bearer of the parasite and many other matters of detail are not as yet definitely determined. With our present knowledge of parasitic disease, however, and the extraordinary impetus which this line of investigation has recently been given, there is small reason to doubt that this increasingly fatal disease will before long be understood and mastered. It is a matter of the greatest possible importance to the colonization of Africa.

MEDICAL NOTES.

AN ARMY HOSPITAL. — Plans have been completed for the establishment of an army general hospital and medical station in the District of Columbia. A hospital building is now under construction, and it is intended to remove to this site, which is beyond the present Soldiers' Home, the army medical school, now on the Smithsonian Reservation. It is expected that a post-graduate school will be established for newly appointed assistant surgeons and for older officers who may wish to take up some special line of study. When completed, the hospital will be the largest of its kind under government supervision and will number many buildings. The site overlooks the national capitol, and the hospital is to serve as a memorial of the late Major Walter Reed, in recognition of his distinguished services in the investigation of yellow fever.

MEDICAL LEGISLATION IN THE NAVY. — It is hoped by naval medical officers that legislation favorable to the hospital corps of the navy may be accomplished at the coming session of Congress. An increase of pay and reorganization of the service is regarded as essential if suitable men are to be secured in the future. A recommendation in favor of the establishment of a dental corps will also be presented and an effort made to permit the employment of women nurses, particularly at naval hospitals.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 31, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 51, scarlatina 21, typhoid fever 11, measles 38, tuberculosis 33, smallpox 0, leprosy 0.

The death-rate of the reported deaths for the week ending July 31, 1907, was 16.94.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 27, 1907, was 173, against 211 the corresponding week of last year, showing a decrease of 38 deaths and making the death-rate for the week 14.80. Of this number 96 were males and 77 were females; 168 were white and 5 colored; 110 were born in the United States, 56 in foreign countries and 7 unknown; 32 were of American parentage, 115 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 48 cases and 2 deaths; scarlatina, 18 cases and 1 death; typhoid fever, 20 cases and 1 death; measles, 58 cases and 4 deaths; tuberculosis, 48 cases and 18 deaths; smallpox, 0 case and 0 death. The deaths from pneumonia were 11, whooping cough 0, heart disease 19, bronchitis 4 and marasmus 5. There were 10 deaths from violent causes. The number of children who died under one year was 38; the number under five years, 57. The number of persons who died over sixty years of age was 26. The deaths in public institutions were 63.

There were 4 cases and 3 deaths reported from cerebrospinal meningitis during the week.

APPOINTMENT OF DR. MOOERS. — Dr. Emma W. Mooers, formerly assistant pathologist at the McLean Hospital, Waverley, Mass., has recently accepted a position in the University of Munich where she is now assistant instructor in the Psychiatrische Klinik of which Kraepelin is the head.

BEQUEST TO MASSACHUSETTS CHARITABLE EYE AND EAR INFIRMARY. — By the will of the late F. R. Sears, of Nahant, Mass., $20,000 is left to the Massachusetts Charitable Eye and Ear Infirmary, the income to be used to promote the happiness of the patients of the institution. Mr. Sears never had an official connection with the institution, but was particularly interested in its work.

Gift to Lynn Hospital. — Mr. Charles H. Newhall, of Lynn, has given to the Lynn, Mass., Hospital corporation 10,000 square feet of land adjoining the present hospital grounds. Mr. Newhall is vice-president of the hospital corporation and one of the chief benefactors of the institution. By the acquisition of this land the property will be protected and opportunity offered for future expansion.

Meeting of Massachusetts Association of Boards of Health. — At the quarterly meeting of the Massachusetts Association of Boards of Health, held last week on Gallup's Island, Boston Harbor, papers were read on Recent Public Health Legislation, by Dr. Henry P. Walcott, chairman of the Massachusetts State Board of Health, and Frank K. Wheatley, Senator from Plymouth County.

NEW YORK.

Bequests to Hospitals. — By the will of the late Mrs. Susan A. R. Moses, of Brooklyn, N. Y., the sum of $50,000 is left to various religious and charitable institutions. Among the charitable bequests, some twenty in number, are $5,000 each to the Brooklyn Home for Consumptives and to the Cottage Hospital of Laconia, N. H.

Wainwright Westchester Sewer Bill. — Governor Hughes has signed the Wainwright Westchester Sewer bill. This provides for the construction of a great sewer through a considerable portion of Westchester County, which is to empty the sewage of the district, including the large towns of White Plains, Mount Vernon and Yonkers, into the Hudson River. Much opposition was at one time brought to bear against the passage of the bill, particularly by the Merchants' Association of New York, on the ground that the sewer, with its outlet just below the city of Yonkers, would tend to increase the pollution of the Hudson's waters; but it is stated that this opposition was afterwards withdrawn when the bill had been amended in such a way as to obviate the menace to public health which was involved in the original measure.

Current Literature.

The Journal of the American Medical Association. July 6, 1907.

1. Sanders, W. H. *State Medicine; Its Foundation, Superstructure and Scope.*
2. Gorgas, W. C. *Sanitation in the Canal Zone.*
3. *Arneill, J. R. *Digestive Disorders in Pulmonary Tuberculosis.*
4. *Connor, L. *Does the Opacity of Incipient Cataract Ever Regain Transparency?*
5. Ray, J. M. *Loss of Vitreous Humor in the Operation for Extraction of Cataract.*
6. Willson, R. N., and Marcy, A. *Rupture of an Aortic Aneurism in a Child of Four Years.*
7. Parker, W. R. *Neurofibroma of the Orbit, Kronlein Operation.*
8. *Munson, J. F. *Suprarenal Hemorrhage; An Unusual Cause of Sudden Death.*
9. Casselberry, W. E. *The Indications for Resection of the Middle Turbinal.*
10. Ricketts, H. T. *The Rôle of the Wood Tick in Rocky Mountain Spotted Fever.*
11. *Elliott, A. R. *A Clinical Study of Blood Pressure Variations in Diabetes and Their Bearing on the Cardiac Complications.*
12. *Solis-Cohen, M. *Latent Diphtheria. A Public Health Problem.*
13. Searcy, G. H. *An Epidemic of Acute Pellagra.*

3. Arneill calls attention to the frequency of enteroptosis with functional gastric and intestinal symptoms in pulmonary tuberculosis. These often cause the patient to limit his diet to the point of starvation. The patient's symptoms which result directly from the tuberculosis may be completely overshadowed by the psychoneurotic dyspeptic complaints. It is of great importance, therefore, that these receive proper treatment, largely by suggestion, rest, generous feeding and general correction of mode of life. A thorough investigation of digestive functions is often desirable, but in most cases the indigestions which arise in the course of pulmonary tuberculosis, too often as a result of over-feeding, can be treated along symptomatic lines, by bitter tonics and hydrochloric acid or by alkalies and antifermentatives. In general, incipient cases do not show abnormality of gastric analysis. Cases of moderate advancement show most often hypochlorhydria, but occasionally hyperchlorhydria; and advanced cases show diminished or absent hydrochloric acid and pepsin with diminished motor power. When this loss of motor power is due to enteroptosis, relief may often be given by means of adhesive plaster bandages or abdominal belts. The danger of over-feeding must not be disregarded; forced feeding should be persisted in only until nutrition has reached an eminently satisfactory point; it should not be pushed to the point of producing indigestion and obesity.

4. Connor has collected observations from 51 authors of 147 cases in which the opacity of incipient cataract has wholly or in part disappeared and the lens has regained its transparency. The occurrence of this phenomenon is admitted to be rare.

8. Munson reports a case of collapse and death in which at autopsy there was found to be hemorrhage in both suprarenal glands. Suprarenal hemorrhage is said to be very common in still-born and very young infants, but in adults it is comparatively rare. Clinically the cases simulate peritonitis or internal hemorrhage, show symptoms of suprarenal insufficiency (*i. e.*, prostration, loss of weight, diarrhea) or resemble apoplexy.

11. Elliott finds, contrary to the assertions of Potain and Teissier, that the blood pressure in uncomplicated diabetes is not increased. In severe progressive forms of diabetes, in young spare individuals, there was distinct hypotension.

12. Solis-Cohen reports 27 personal cases of latent diphtheria, in which no membrane was visible. In most cases there were slight symptoms in the throat. He further cites the findings of other investigators who obtained positive cultures in considerable percentages (3% to 29%) of large numbers of children with sore throats. He maintains that the prevalence of diphtheria is due to these latent cases, and to the so-called "carrier" cases in persons who have been in contact with patients with diphtheria and harbor the bacilli without showing symptoms. He urges that all cases of sore throat should be examined bacteriologically, that latent cases and infected "carriers" should be carefully sought out and isolated.

13. Searcy describes the occurrence of an epidemic in a colored insane hospital in Alabama which he finally identified as pellagra. The disease has never before been reported in the United States, but in all likelihood has occurred unrecognized. It is met in nearly all European countries, especially those bordering on the Mediterranean, and is due to the continuous eating of damaged corn. Poor hygienic surroundings and exposure to sun are thought to have a predisposing influence. The first symptoms are a

general lassitude and weakness, soon followed by gastric and intestinal disturbances, sore mouth and skin lesions of vesicles and bullæ most commonly on the backs of the hands and wrists. Patients take to bed on account of weakness; they are dull and depressed but complain little of any pain or discomfort. The temperature rarely rises more than a degree and a half above normal. Fatal cases die from one to several weeks after taking to bed from progressively increasing weakness. Where recovery occurs it occupies months. In diagnosis scurvy, acrodynia, purpura and erythema multiformæ are to be excluded. Post-mortem findings include pachymeningitis, some sclerosis of the brain and cord and fatty degeneration of internal organs. In the author's 88 cases there were 57 deaths. Of the whole number only 8 were males. Eighty per cent had been in fair or good health previously. No nurses had the disease. The corn meal used at the hospital proved on examination to have been made of mouldy grain and to contain quantities of bacteria and fungi. After this was changed no new cases developed.

[F. W. P.]

MEDICAL RECORD.
JULY 6, 1907.

1. POST, G. E. *Operations for Urinary Calculi.*
2. PILCHER, J. E. *The Future of Medical Journalism.*
3. *BISSELL, J. B. *Syphilitic Tumors of the Breast.*
4. BAKER, A. H. *The Prevention of Venereal Disease.*
5. LEAKE, H. K. *Chronic Perforating Ulcer of the Bladder.*
6. DORAN, W. T. *Report of a Postoperative Case of Fibroid Sarcoma Under the Enzyme Treatment.*

3. Bissell makes a plea for accurate diagnosis, thorough examination and ample deliberation in cases of tumors of the breast, since gummata of the breast are not extremely rare, and they can be cured by mercurial treatment without mutilation. After reviewing the differential diagnosis of tumors of the breast, and giving the history of five cases of syphilitic tumors of the breast observed by him, he gives the following conclusions: That as a rule late syphilitic lesions of the breast can be quite easily differentiated by careful diagnosis, and certain breasts can be saved from operation. In case of doubt we should resort to the rapid administration of mercury by hypodermic injection, and see what effect it has on the tumor.

NEW YORK MEDICAL JOURNAL.
JULY 6, 1907.

1. CARRINGTON, P. M. *The Climate of New Mexico, Nature's Sanatorium for Consumptives.*
2. *BILLINGS, J. S. *Auscultation Ratios in Pulmonary Tuberculosis.*
3. NORTHRUP, W. P. *Early Recognition and Treatment of Pneumonia in Infants and Young Children.*
4. OERTEL, H. *On the Histogenesis of Tumors, Particularly Cancer.*
5. ROSS, G. G. *Some Thoughts on Malignant Growth of the Mouth and Lips.*
6. *COAKLEY. *A Pathognomonic Eye Symptom in Rabies.*
7. BANNAN, T. *Medical Experiences: The Doctor.*

2. Recognizing the common observation of a relative dullness with prolonged and high-pitched expiration and increased voice sounds at the right apex which may be physiological, Billings has devised a method of examination which in his belief will serve to identify the pathological cases. He asserts that in cases of "physiological intensification" the increased intensity of the breath sounds is present over the lower portion of the right upper lobe as well as at the extreme apex; whereas in early tuberculosis the intensity at the apex is out of proportion to that over the lower portion of the upper lobe. To obtain numerical values representing the intensity of breath sounds at different points he uses a modification of the Oertel stethoscope. By means of this in 100 normal chests, 22 of which showed physiological intensification at the right apex, he found that the ratio of intensity of breath sounds at the apex to that of the sounds over lower portions of the right upper lobe was 5: 4 or 5: 3. In 22 cases with tuberculous infiltration the ratio was 2:1 or greater. He believes that a ratio of 5: 2 or less establishes a probability of pathological infiltration.

6. Coakley in observing the pupils of a rabid dog noticed extreme contraction of the pupils which resisted mydriatics, but within an hour of death gave place to sudden dilatation. The contraction of the pupils was greater than could be produced by morphine or other drugs, the effect of which was tested. In 114 dogs with rabies examined the contracted pupil was present in a great majority. Coakley believes that this condition of the pupils resisting mydriatics followed by dilatation a few hours before death is pathognomonic of rabies.

[F. W. P.]

THE LANCET.
JULY 6, 1907.

1. WILSON, T. *The Ingleby Lectures on Pelvic Inflammation in the Female.*
2. EHRLICH, P. *Experimental Researches on Specific Therapeutics.*
3. *CHEYNE, W. W. *Two Cases of Intermittent Hydronephrosis treated by Operation.*
4. *LAMBKIN, F. J. *An Improved Preparation for Intramuscular Injections of Insoluble Salts of Mercury in the Treatment of Syphilis.*
5. *SARGENT, P. W. G., and KISCH, H. A. *Separation of the Acetabular Epiphysis of the Femur: its Relation to Adolescent Coxa Vara.*
6. *TAYLOR, A. *The Opsonic Index and Agglutination in Cerebro-spinal Meningitis.*
7. HUDSON, A. C., and PANTON, P. N. *An Investigation of Some of the More Unusual Forms of Acute Conjunctivitis.*
8. MACNAUGHTON-JONES, H. *Important Epochs in the History of the Old School of Medicine in Paris.*

3. Cheyne gives the details of two cases of intermittent hydronephrosis with operation. This consisted in a nearly complete transplantation of the ureter from the upper part of the pelvic sac to the lower part of the sac thus allowing free escape of urine. The results in his two cases were very satisfactory.

4. Lambkin uses palmitin as a vehicle for the suspension of mercury for intramuscular injections in syphilis. He claims that it is non-irritant and non-toxic; it is not so easily oxidized as the other components of human fat, but is easily saponified and soluble in the human organism, and does not enter the circulation as a foreign body. It makes a more homogeneous preparation than any other, and its melting point can be raised or lowered with the greatest facility. The addition of pure absolute creosote and camphoric acid prevents pain, not only at the time of injection but that which usually comes on two to three days after an injection.

5. Separation of the acetabular epiphysis of the femur is a condition of not infrequent occurrence. Diagnosis is usually made after an x-ray has been taken for some trifling accident. Its relation to adolescent coxa vara is important. If a case of separated epiphysis with a history of injury is untreated, the deformity known as traumatic coxa vara results. Treatment consists in wrenching the bones into place under an anesthetic, and if this cannot be done the neck must be screwed or nailed to the epiphysis, the femur being rotated and abducted till the fractured surfaces are in apposition. The symptoms occur in the following order: (1) Slight limping and aching; (2) increased pain, sometimes preceded by slight trauma; and (3) deformity. These stages correspond to the pathological ones of (1) separation of epiphysis without vertical rotation; (2) rotation on vertical axis; and (3) coxa vara. The severity of the pain depends on the rapidity and extent of the rotation. The writer urges immediate skiagraphy of all cases of slight limp or aching about the hip joint in patients of 12 to 18 years.

6. Taylor concludes from his work on the opsonic index and agglutination tests in cerebro-spinal meningitis that a high opsonic index is pathognomonic of the disease, but that a normal index does not prove its absence.

[J. B. H.]

BRITISH MEDICAL JOURNAL.
JULY 6, 1907.

1. GOWERS, W. R. *Sudden Cerebral Lesions: Their Diagnosis and Immediate Treatment.*

2. Williams, C. T. *Laennec and the Evolution of the Stethoscope.*
3. Kirkland, R. *Where Physician and Surgeon Meet.*
4. *Pringle, J. H. *Notes of an Experience of Stovain as a Spinal Analgesic in 100 Cases.*
5. Gardner, H. B. *The Care of the Patient during Serious Abdominal Operations.*
6. *Jordan, A. C. *Sterility among X-ray Workers.*
7. Cuff, A. *Spontaneous Aneurysm of the Dorsalis Pedis Artery.*
8. *Morgan, H. de R. *The Bacteriology of the Summer Diarrhœa of Infants.*

4. Pringle gives the results of the use of stovain in 100 cases including 31 inguinal herniæ, 12 appendectomies and 6 major amputations. He injects in the second lumbar space, and waits till there has been a free flow of spinal fluid before injecting .04 to .06 gm. of stovain. The patient is in the sitting posture. After the canula is withdrawn, the puncture is covered with collodion and the table raised at the foot. It takes 5 to 15 minutes to get the effect of the drug. The highest incision he has made has been for umbilical hernia. Out of the 100 cases there was one death, which however was not necessarily due to the anesthetic. There were 7 partial and 15 complete failures to produce anesthesia.

6. Jordan urges the most extreme care among x-ray workers to protect themselves from the malign influence of the rays on the sexual organs. He suggests several schemes to enable the operator to work with safety and comfort.

8. Morgan in his recent researches on the bacteriology of summer diarrhea in infants has found a hitherto undescribed bacillus, which preponderated among all non-lactose fermenting bacilli. It differs from the bacillus of hog cholera of McFadyean, from the B. Enteritidis of Gaertner and the B. Dysenteriæ of Flexner. He believes that the type of summer diarrhea of infants in America is clinically and bacteriologically different from that in England. [J. B. H.]

The Practitioner.
June, 1907.

1. Crawfurd, R. *Valvular Disease of the Heart. VI. Tricuspid Regurgitation.*
2. *Moynihan, B. G. A. *Duodenal Ulcer.*
3. *Galbraith, J. J. *The Pretuberculous Stage of Pulmonary Tuberculosis.*
4. *Rogers, L. *The Early Diagnosis and Cure of the Presuppurative Stage of Amœbic Hepatitis.*
5. Bishop, E. S. *Post-partum Hemorrhage.*
6. Simpson, W. J. *The Evidence and Conclusions Relating to the Mulkowal Tetanus Case.*
7. Hawthorne, C. O. *On Retinal Embolism.*
8. Hadfield, C. F. *The Treatment of Dropsy by Deprivation of Salt.*

2. At the end of 1906, Moynihan had operated on 114 cases of duodenal ulcer, with perforation in 11 cases. Out of 262 cases, 242 ulcers were found in the first part of the duodenum, usually on the anterior surface. In about 40% of his cases it was associated with gastric ulcer. He believes that in almost all cases of hyperchlorhydria the real trouble is gastric or duodenal ulcer. In 15 of his cases repeated and increasing hemorrhage was the cause of operation; this is a far more serious matter than hemorrhage from a gastric ulcer. In 7 of his cases gall-stones were present. The differential diagnosis of these two conditions is difficult. In the early stages where prolonged careful medical treatment can be carried out there is no need of surgical interference; if this cannot be done, he advises surgery from the start.

3. The pretuberculous stage of pulmonary tuberculosis may be roughly said to be that early stage at which the physical signs are indefinite and insufficient of themselves to justify a diagnosis of pulmonary mischief. They constitute a clinical picture which can only be recognized by experience. Over-attention to variations from the normal in the lung condition tends to exclude from consideration other broader and perhaps more significant symptoms and signs. The estimation of the length of time from the exposure to infection to the time of development of the first symptoms is an interesting and important but difficult task. In his cases this period averages three years. He could get decided evidence of infection in only 31% of 150 cases. The first symptoms are functional disorders, as, for example, loss of appetite, constipation, dyspepsia, etc. An evening pyrexia is very significant. Hemoptysis very often occurs with no physical signs. The result of coming to a "tentative diagnosis" so far as treatment is concerned amply justifies itself whether the real condition turns out to be tuberculosis, influenza or debility. The chief characteristic of the pretuberculous anemia is a muscular dystrophy affecting both voluntary and involuntary muscles. The bronchitis and "colds" of this stage are marked. Galbraith goes into the details of recent methods of diagnosis, such as wide variations of temperature, x-ray examinations, showing the small size of the heart, the ulnar reflex, examination with the thoracic perimeter, the tuberculin test and the opsonic index. The paper is an excellent recapitulation of this entire subject and is well worth reading.

4. In cases of amebic abscess of the liver it is found that weeks of fever with a slight leucocytosis precede the signs of pus. This is the pre-suppurative stage of amebic hepatitis. If this stage can be recognized a very important step will have been taken. The fever at this stage yields to large doses of ipecac, and thus the abscess stage is prevented. The writer cites various series of cases with and without dysentery treated with and without ipecac and gives the results. He believes it very important to try treatment with this drug before operating. [J. B. H.]

Deutsches Archiv. für Klinische Medizin, 1907, Bd. 90, Hefts 1 and 2.

1. *Schlayer and Hedinger. *Experimental Studies of Toxic Nephritis.*
2. *Wandel, O. *A Contribution to the Nature and Therapy of Chlorosis.*
3. *Theopold, J. *A Contribution to the Knowledge of Arhythmia Perpetua.*
4. *Heineke, A., and Meyerstein, W. *An Experimental Investigation of the Hydrops of Renal Disease.*
5. Blumenthal. *Aplastic Anæmia.*
6. *Schmidt, A. *Perforation of Anthracotic Softened Bronchial Lymph Nodes into the Bronchial Passages and its Clinical Diagnosis.*
7. *Selling, T. *Investigation of the Percussion Note.*
8. Fürst, T., and Soetbeer, F. *Experimental Studies on the Relation Between Filling and Pressure in the Aorta.*

1. The intimate relation existing between general blood pressure, local renal circulation and diuresis is well recognized, but disturbances of these relations in nephritis are not so well understood. The effect of certain stimuli on these relations in health is known. Their action on the experimentally diseased kidney has been studied by Schlayer and Hedinger, and the action of such stimuli used as a functional test of renal activity in various forms of toxic nephritis (potassium chromate, mercuric chloride, cantharidis, arsenic and diphtheria toxin). Blood pressure was studied in these experiments by a mercury manometer, renal volume by an oncometer, and diuresis by an apparatus for estimating the number of drops of urine excreted in five minutes. Renal lesions were studied histologically. By this means Schlayer and Hedinger distinguish two types of nephritis, a tubular (potassium chromate and mercuric chloride) and a vascular (cantharides and arsenic). Diphtheria toxin produces a combination of the two types. In the tubular type in the earlier stages there is no change in the vascular contraction and dilatation of the kidney and there is an increased diuresis. Later, dilatation is decreased and finally stopped with cessation of diuresis. Contractibility of the renal vessels persists. In the vascular type disturbance of vascular contraction and dilatation appears early, and soon there is a total insufficiency of the renal vessels, with very slight excretion of urine. In the tubular type albumin and casts are present in considerable amount, while in the vascular type they are slight. Histologically demonstrable lesions are much slighter in the latter. These studies show that albumin excretion can take place in both glomeruli and tubules, while casts are formed in the tubules without any relation to the blood vessels. With severe vascular lesions decreased diuresis is always associated, but the converse is

not true. In acute vascular nephritis there is a decreased blood pressure.

2. Wandel by therapeutic experiment on chlorotic patients attempts to answer the question whether in chlorosis there is a deficient stimulation of the hematopoetic organs, or an inability for them to form hemoglobin owing to a lack of iron. Stimulation of the hematopoetic centers he seeks by sweating in the electric light bath. This increases the number of blood corpuscles, and in secondary anemia rapidly restores the blood to normal. In chlorosis, however, the increase in hemoglobin is very slow as compared with that obtained after giving iron. Consequently he believes the second of the two hypotheses best explains the disease. In chlorosis hydrotherapy is an adjuvant in treatment, but not a substitute for iron. Iron in some form is necessary for successful treatment, whatever its way of acting may be.

3. Arhythmia is divided into three groups: (a) Infantile type, (b) type due to extra systoles, and (c) arhythmia perpetua. In the latter there is complete and persistent irregularity in which the length of systole and diastole and the force of contractions vary and the normal rhythm is completely lost. This form is usually associated with a systolic venous pulse which does not depend on a tricuspid insufficiency, but on a primary auricular pause. The condition is more frequently associated with chronic myocarditis than with valvular disease and may occur without there being a break in compensation.

4. Heincke and Meyerstein have studied the relations between hydrops and salt and water excretion in experimental nephritis. They used rabbits and injected uranium nitrate or potassium bichromate to obtain renal lesions. Between the two there is a considerable difference in action, the uranium salt producing the more marked edema. As in man so in these animals the edema does not appear always to be produced in the same way. In the uranium rabbits edema seems to be the result of vascular lesions and may appear without much of a demonstrable anatomical lesion of the kidney. In the chromium rabbits, on the other hand, the edema is more the result of lesions of the tubular epithelium. In both, salt retention plays a part, but with uranium it has a minor rôle. The tubular epithelium appears to have a secretory action for salt.

6. Schmidt finds that perforation of softened anthracotic lymph nodes into the respiratory tract is not very uncommon about Dresden. Usually an aspiration pneumonia followed by pulmonary abscess or gangrene results. The diagnosis can be made when the associated pulmonary tuberculosis remains in the background. The diagnosis is to be based on the old age of the patient, the pulmonary condition beginning as a putrid bronchitis and developing into abscess or gangrene, localized pain or tenderness in the region of the manubrium sterni and the presence in the sputum of small bits of friable material which on microscopic examination show large particles of carbon pigment and various degeneration products.

7. Selling has studied by means of resonators and with a receiving phonograph the note produced by percussion of the lungs in normal and pathological conditions. This paper is concerned more with a theoretical consideration of the acoustics of the percussion note than with any practical application in diagnosis. [H. A. C.]

REVUE DE CHIRURGIE.

JUNE, 1907.

1. QUÉNU, E. *Separation of the Inferior Tibio-fibular Articulation.* (Continued article.)
2. *DESJARDINS, A. *The Technic of Pancreatectomy.*
3. *NICLOT, and ROMARY. *Gunshot Wounds (Armes de Chasse) in their Relation to Injection.*
4. *ALAMARTINE, H. *Tuberculous Hypertrophic Osteoarthritis.*
5. *DÉVÉ, F. *Hydatid Cysts of the Liver Containing Air.* (Concluded.)
6. *LE DAMANY, P. *Congenital Dislocation of the Hip.*

2. Desjardins describes a method of partial excision of the pancreas based on anatomical grounds. This can best be performed by excising the duodenum also. The various anastomoses necessitated by this procedure are well illustrated.

3. From various experiments Niclot and Romary conclude that a shot-gun wound should be considered and treated as though superficially infected. The skin should be cleaned with antiseptics. All exploration to remove shot should be avoided.

4. Alamartine calls attention to the fact that in hypertrophic osteo-arthritis and osteitis (the so-called syndrome of Marie) tuberculosis will be found as a cause in a much larger percentage of cases than is at present acknowledged. Further, in many cases a distinct family history of tuberculosis is present.

5. Hydatid cysts of the liver containing air may be divided as follows: (1) Cysts opening into a bronchus; (2) cysts opening into the digestive tract; (3) closed cysts; (4) cysts containing air after operation. Dévé has collected 57 cases of cysts of this sort. Several radiographs made with the body in varying positions are of definite aid in diagnosis. Wherever possible such cysts should be drained, as only a small amount of air will be absorbed after aspiration.

6. By a large number of statistics gathered from physicians, LeDamany finds that the frequency of congenital dislocation of the hip increases with the anthropological elevation of the race, attaining its maximum in the white female. This is in contradistinction to the rule governing all other congenital affections which are more frequent among the black races. [W. C. Q.]

Correspondence.

LETTER FROM PARIS.

(From Our Special Correspondent.)

AMATEURS OF PURE SCIENCE.

PARIS, July 9, 1907.

Mr. Editor:

"MY musical friend, at whose house I am now visiting, has tried all the owls that are his near neighbors with a pitch pipe set at concert-pitch, and finds they all hoot in B flat. He will examine the nightingales next spring." (GILBERT WHITE, *Natural History of Selborne.*)

The dear soul! And to think that the universe waited until the year of our Lord, 1771, before knowing that the English owl hoots in B flat! However, since the circulation of the blood in the human body was only discovered in the century before that, it is perhaps not a matter for surprise that facts of minor importance had to wait even longer. Let us hope that the musical gentleman really did live until the following spring, so as to settle that little question about the nightingales. Think of that old dry-as-dust sitting up during the beautiful spring nights of England, blowing on his wretched pipe, instead of listening to the sweet songs in the bushes that it was only his privilege to hear during a brief period each year. He reminds you of Murger's Latin quarter student, "*Qui à la place du cœur n'avait qu'un vieux bouquin.*"

This by way of preface to a few remarks on the amateur of pure science in general. This is a being that always fills me with wonderment; a man to admire, in a way, while you deplore his lack of practical sense; a man to whom you take your hat off, as you would to one vounteering for a forlorn hope, while at the same time you inwardly remark that you thank God you are not such as he!

There exists scattered all over the world, but probably more so on the Continent than elsewhere, a large army of these amateurs of pure science, men completely detached from the world, its interests, struggles and ambitions, often pure "solitaires" without families, living in and for their laboratories, on some miserable salary that just supports their physical wants; and who at certain intervals produce some abstruse and painstaking work that is of no use to anything or anybody, and that at the end of the year is rewarded by some learned academy by a medal or a prize.

Just take, for instance, the reports of the Société de Biologie here in Paris, and run over the titles of the papers presented; and then ask yourself the question what could have been the object in view of the men who devoted all this time and labor to the elucidation of this or that point. One man, for instance, will discourse on the mode of

termination of the motor-nerve filaments in the muscular fibrillæ of the quadriceps of the common house fly, *musca embêtans*. What practical result could he expect ever to come out of all this effort? for in this world the only effort that is of value is the effort that results in some advance to the welfare of our species.

Coming as I do from many generations of practical New England stock, I can comprehend nothing that is not practical; and when I look about me and see the quantities of matters of real practical interest to humanity that could very well stand a certain amount of thought and labor on the part of intelligent men, and feel that thereby the health, comfort and interests of humanity would be materially advanced, — it seems to me a great pity that all this mass of work on the part of these amateurs of pure science could not be directed into more profitable channels. For there is no disguising the fact that if it were feasible to calculate the amount of work put in by this class of society in the course of a year, it would be found to be very considerable indeed. When I look at their products, a yearbook of the Société de Biologie or of the Académie des Sciences, for instance, I can only think of one thing, a cemetery for the corpses of still-born infants, products of human energy destined to come to naught from the time of their inception.

Some indignant laboratory man will come back at me, no doubt, with the arguments on his side of the question: the practical results that *have* come out of the laboratory; that I take at best a narrow view of things; and that my ideals are low and merely utilitarian.

I have no idea of expressing disapproval of laboratory work in general; merely of what I call the amateur of science *pure*, that is, science for the mere love of science, without purpose or aim, science such as that of my hooter in B flat mentioned above.

Just take him as an instance. The amiable Gilbert thinks he has dropped onto something quite important, for he first reports the fact in his letter of Feb. 12, 1771, to the Hon. Daines Barrington, and then returns to the subject a second time in his letter of Aug. 1, 1771, to the same party, six months later, during which period he has had time to collect further data on this absorbing topic: "A neighbor of mine, who is said to have a nice ear, remarks that the owls about this village hoot in three different keys, in G flat (or F sharp), in B flat and A flat. He heard two hooting to each other, the one in A flat and the other in B flat. *Query:* Do these different notes proceed from different species, or only from various individuals? The same person finds upon trial that the note of the cuckoo (of which we have but one species) varies in different individuals; for, about Selborne wood, he found they were mostly in D; he heard two sing together, the one in D, the other in D sharp, who made a disagreeable concert; he afterwards heard one in D sharp, and about Wolmerforest some in C. As to nightingales, he says that their notes are so short, and their transitions so rapid, that he cannot well ascertain their key. Perhaps in a cage, and in a room, their notes may be more distinguishable. This person has tried to settle the notes of a swift, and of several other small birds, but cannot bring them to any criterion."

There, you see, is the amateur of pure science in all his perfection. He began with the owl, and was so fascinated by the interest of the pursuit (appetite comes while eating) that he went on to a number of other birds, at the risk of acquiring insomnia and that apparently common though to me mysterious disorder which English people designate as "a chill on the liver"! And all this to what purpose? *Faut-il, Seigneur, qu'il ait en du temps à perdre!*

Again, I know that the great German, Goethe, has said that "*es ist immer gut etwas zu wissen*"; and that deep thinkers all advise "a wide sympathy" in human affairs, "a broad-minded interest" in all about us. Still I think that there is a limit to that sort of thing, and that time and labor put into the elucidation of a subject merely for sport, for the pleasure of the chase, as it were, with no visible result at the end, is time and labor lost. The world in not one whit the better, in any conceivable way or shape, for knowing that the Selborne owls hoot in B flat, — when they don't hoot in some other key, sharp or flat!

In connection with Goethe's maxim, I was once called to see a patient here with a small subcutaneous abscess of the neck, and while attending to it I had time for a good deal of general conversation. He was a tall, spare Englishman of about fifty-five, evidently somebody, though I had no idea what; he might perfectly well have been either a superior officer, a distinguished surgeon, a leading divine, in fact, anything of rank you please. But two points struck me forcibly at the first visit: he was well posted in the relative merits of asepsis as opposed to antisepsis; and he knew all about the arguments in favor of operating in appendicitis during the first twenty-four hours, and, after the lapse of that period, of leaving it to get well as best it can. So I made up my mind by the end of my visit that this was some distinguished confrère in disguise, and that he was — well, excuse the language — pulling my leg. He ultimately turned out to be a celebrated judge, now a lord, who had found it profitable in his profession to know as much on all subjects as he conveniently could assimilate.

I was very much struck with the beauty of pure science once while attending a reunion of the Académie des Sciences here in Paris. This is the highest scientific body in France, composed of the leading men in all branches of science. To become a member of this body is the crowning step in all French scientific careers. Attend one of these meetings and you will see there gathered together all that France boasts of the very best.

Well, I went to see them, one day, and one tottery, aged gentleman, with a feeble, quavering voice, got up and addressed them on the order and place in which the buds and shoots develop on a certain plant during the growth of its initial spike; and while reading this document in his inaudible voice he turned his back frequently to his audience and drew on a blackboard tiny little diagrams which no one could see! This before a gathering of eminent surgeons, physicians, astronomers, chemists, mathematicians, physicists, etc. It was an extraordinary performance.

With the world filled with unsolved problems not only of a biological order but in all branches of knowledge, problems whose correct solution would be of immense benefit and interest to humanity, it is difficult to understand that these hooters in B flat can have the effrontery either to take themselves seriously and imagine they are accomplishing something of use, or that they should think that the world takes sufficient interest in their papers to read them when they appear in due season in the *comptes rendus*. What an appalling dust-bin must be the archival sanctum of such societies as the Biological, and others of the same class!

"Spectator."

PROFESSOR MENDEL'S GREATEST SERVICE TO NEUROLOGY.

Boston, July 26, 1907.

Mr. Editor: The obituary notice of Professor Mendel in this week's Journal omits any mention of his greatest service to neurology. One of the last acts of his life was to assist in preparing the number of the *Neurologisches Centralblatt* which contains his son's tribute to his memory and the regret of the publishers at the breaking of the associations of over a quarter of a century. The establishment and the successful management of the *Centralblatt* during all these years, before similar journals in other languages were even thought of, have made the neurologists of the world his debtor by giving them a full and careful summary of what was best in neurological literature. In addition to this Professor Mendel undertook the general editorial work of the *Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Neurologie und Psychiatrie*, to which he also contributed the section on the organic psychoses. Although his volume (not "paper") on general paralysis which antedates the *Centralblatt* still remains a classic, the *Centralblatt* itself and the *Jahresbericht* will be his most enduring monument and a worthy memorial of a genial and learned teacher.

Yours very truly,

Philip Coombs Knapp, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 20, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,555	733	Quincy	4	1
Chicago	—	—	Waltham	5	—
Philadelphia	—	—	Pittsfield	8	3
St. Louis	—	—	Gloucester	7	2
Baltimore	228	106	Brookline	3	—
Cleveland	—	—	North Adams	6	1
Buffalo	—	—	Chicopee	14	4
Pittsburg	—	—	Northampton	10	1
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	3	—
Washington	—	—	Leominster	—	—
Providence	73	37	Hyde Park	3	0
Boston	158	39	Melrose	3	0
Worcester	52	15	Newburyport	—	—
Fall River	56	39	Woburn	6	—
Cambridge	15	4	Marlboro	3	1
Lowell	41	21	Westfield	3	—
Lynn	20	5	Peabody	—	—
New Bedford	30	15	Revere	3	2
Springfield	20	7	Attleboro	2	1
Lawrence	25	12	Clinton	6	1
Somerville	10	3	Adams	—	—
Holyoke	25	13	Gardner	3	1
Brockton	12	2	Milford	—	—
Malden	3	—	Watertown	4	0
Chelsea	15	1	Plymouth	—	—
Salem	9	3	Weymouth	4	0
Newton	9	6	Framingham	2	—
Haverhill	9	1	Southbridge	5	3
Fitchburg	—	—	Wakefield	—	—
Everett	6	1	Webster	—	—
Taunton	18	6			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 17, 1907.

KERR, J. W., assistant surgeon-general. Granted leave of absence for twenty days from Aug. 12, 1907. July 16, 1907.

MEAD, F. W., surgeon. Directed to proceed to Point Pleasant, N. J., for the purpose of examining keepers and surfmen of the Life Saving Service; upon completion of which to rejoin his station. July 16, 1907.

KALLOCK, P. C., surgeon. Granted leave of absence for seven days from July 15, 1907. July 12, 1907.

WERTENBAKER, C. P., surgeon. Directed to proceed to Ocean City and other points along the Chesapeake Bay, for the purpose of examining keepers and surfmen of the Life Saving Service; upon completion of which duty to rejoin his station.

STANSFIELD, H. A., passed assistant surgeon. Relieved from duty at Havana, Cuba, effective July 11, 1907.

BAHRENBURG, L. P. H., passed assistant surgeon. Granted leave of absence for seven days from July 15, 1907, under paragraph 191, Service Regulations.

HERRING, R. A., assistant surgeon. Granted leave of absence for eight days from June 30, 1907, on account of sickness. July 15, 1907.

KASTLE, J. H., Chief Division Chemistry Hygienic Laboratory. Detailed to attend the eleventh annual convention of the Association of State and National Food and Dairy Departments at Jamestown, Va., July 17–19, 1907. July 15, 1907.

CLEAVES, F. H., acting assistant surgeon. Granted leave of absence for six days from July 15, 1907, under paragraph 210, Service Regulations.

FOSTER, J. P. C., acting assistant surgeon. Granted leave of absence for twenty-seven days from July 20, 1907. July 16, 1907.

FOSTER, S. B., acting assistant surgeon. Granted leave of absence for six days. July 15, 1907.

SAFFORD, M. V., acting assistant surgeon. Granted leave of absence for four days from July 10, 1907, under paragraph 210, Service Regulations.

TOWNSEND, W., acting assistant surgeon. Granted leave of absence for seven days from July 14, 1907. July 12, 1907.

HALL, L. P., pharmacist. Granted leave of absence for seven days from July 16, 1907, under paragraph 210, Service Regulations.

NEVES, GEORGE, pharmacist. Granted leave of absence for 30 days from Aug. 10, 1907. July 11, 1907.

APPOINTMENT.

DR. LOUIS A. THUNIG appointed acting assistant surgeon for duty at Stapleton, N. Y.

RESIGNATIONS.

The resignation of Assistant Surgeon E. M. STEGER was accepted, by direction of the President, to take effect July 14, 1907. July 16, 1907.

The resignation of Pharmacist GEORGE NEVES was accepted to take effect September 8, 1907. July 11, 1907.

BOARDS CONVENED.

A board of medical officers was convened to meet at Baltimore, Md., July 24, 1907, for the physical examination of certain officers of the Revenue-Cutter Service. Detail for the Board: Passed Assistant Surgeon J. T. Burkhalter, chairman; Acting Assistant Surgeon J. LaB. Ward, recorder.

A board of medical officers was convened to meet at San Francisco, Cal., July 24, 1907, for the physical examination of certain officers of the Revenue-Cutter Service. Detail for the Board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon J. D. Long, recorder.

RECENT DEATHS.

DR. EDWARD J. GALLAGHER, of New York, was instantly killed, on July 21, by the collision of his automobile with a railroad train at a grade crossing at the St. Albans station of the Long Island Road, near Jamaica. His fiancée, Miss Helen Madigan, who was with him in the car, was so severely injured, as well as burned by a gasolene blaze which followed the collision, that she died shortly afterward in the Jamaica Hospital. Dr. Gallagher was graduated from Bellevue Hospital Medical College, in 1887, and at the time of his death was visiting physician to the House of Calvary and the Cancer Hospital.

DR. LEE MCELROY, a young practitioner, of Elizabeth, N. Y., died, on July 26, in the Alexian Hospital in that city, of whose visiting staff he was a member. He was a native of Bardolph, Ill., and thirty years of age. He was graduated from the Northwestern University, at Evanston, Ill., and afterwards served as interne in the Alexian Brothers' Hospital, in Chicago. He had been practising at Elizabeth for the past two years.

BOOKS AND PAMPHLETS RECEIVED.

United States Department of Agriculture. Suggestions for Forest Planting in the Northeastern and Lake States.

United States Department of Agriculture. Practical Assistance to Tree Planters.

The Boston Floating Hospital. Thirteenth Annual Report.

Transactions of the Obstetrical Society of London. Vol. XLIX. For the Year 1907. Part II, for March, April and May. London. 1907.

International Clinics. By leading members of the medical profession throughout the world. Edited by W. T. Longcope, M.D., and others. Vol. II. Seventeenth Series, 1907. Philadelphia and London: J. B. Lippincott Co. 1907.

The Practice of Obstetrics. By American Authors. Edited by Charles Jewett, M.D. Third edition, revised and enlarged. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1907.

Diseases of Rectum: Their Consequences and Non-Surgical Treatment. By W. C. Brinkerhoff, M.D. Chicago: Orban Publishing Co. 1907.

Note on Headaches. By Beverley Robinson, M.D. Reprint.

Endothelioma of the Ovary, with Report of a Case of Hemangio-Endothelioma Perivasculare. By Channing W. Barrett, M.D. Reprint.

Nothnagel's Practice. Diseases of the Intestines and Peritoneum. By Prof. Dr. Hermann Nothnagel. Edited, with additions, by H. D. Rolleston, M.A., M.D., F.R.C.P. Second edition, thoroughly revised. Authorized translation from the German, under the editorial supervision of Alfred Stengel, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Treatment of the Diseases of Children. By Charles Gilmore Kerley, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Cook County Hospital Reports 1906. Compiled and edited under the Direction of The Publication Committee of the Cook County Hospital Attending Staff. Chicago.

Sixth Annual Report of the Metropolitan Water and Sewerage Board. Jan. 1, 1907. Boston.

JOHNS HOPKINS HOSPITAL

Original Articles.

COMPARATIVE TESTS FOR OCCULT BLOOD IN GASTRIC CONTENTS AND FECES, WITH ESPECIAL REFERENCE TO THE BENZEDIN TEST.

BY JOHN W. DEWIS, M.D., BOSTON.

From the Out-Patient Clinic of Dr. Joseph H. Pratt, Massachusetts General Hospital, Boston.

THE demand in recent years for a sure and convenient clinical test for minute quantities of blood or "occult blood"* (Boas[1]) has led not only to discovery of new tests but to the modification and improvement of the older methods. Formerly, aside from the Teichmann test which was of little clinical value, a macroscopical examination was the only means adopted to determine the presence of blood in the stools, and it is only within the past four or five years in this country that other methods have been more generally employed. Any one who has used more exact tests will have found that in many stools very considerable quantities of blood may be present and be imperceptible to the naked eye. Schumm[2] states that stools with a blood content of 5% and more are often passed by as blood-free, and that on a plentiful milk diet, free of meat, even a larger percentage may be unnoticed. The same is true in the examination of gastric contents when, in the presence of free hydrochloric acid, there may be no visible evidence of blood, and yet a distinct reaction for blood be obtained. When the stomach contents are first withdrawn the presence of moderate quantities of fresh blood may be plainly seen, but the hemoglobin, in the presence of the acid gastric juice, is soon broken up and a solution of hematin is formed, causing the pink or red color to fade or disappear; or where large quantities of blood are present, to assume a brown color. Both Kuttner[3] and Ewald[4] call attention to this fact, and the occurrence is illustrated by the following case of subacute alcoholic gastritis: A patient brought to the clinic a specimen of red fluid with a grumous sediment which he had vomited two days previous, — the blood tests were intensely positive. Five hours after ingestion of a glass of milk, a stomach tube with closed end was easily swallowed and 15 ccm. of mucoid opalescent contents obtained; no food elements were seen, and there was not the slightest *visible* evidence of blood, yet the guaiac, aloin and paraphenyldiamin tests were all clearly positive. Free HCl was present.

It is not the purpose of this paper to consider the clinical value of detecting occult bleeding already proved by many observers (as Kuttner[3] Boas,[1] Boas and Kochman,[5] Schloss,[6] Clemm[7] Hartmann,[8] Rossel,[9] Schmilinsky,[10] Petrachi[11] and Rütimeyer,[12] and in this country, Steele,[13 15 16] Steele and Butt,[14] Tileston,[17] White,[18] and Friedenwald and Rosenthal,[19]) but to show by the following review of statistics and a series of comparative tests the methods best suited for clinical purposes.

* Termed by Boas "occult bleeding" because blood is neither macroscopically nor microscopically demonstrable, but can be detected by chemical means.

TEICHMANN'S TEST.

It is more than fifty years since Teichmann,[20] working under Henle, after a long series of experiments, obtained hemin crystals, and demonstrated the process of their formation. Similar experiments on the blood had been independently carried on by Kunde[21] and Hunde,[22] and previously reported. Since that time Teichmann's hemin test has been, until recently, the chief method for detecting small quantities of blood. Hemin crystals, according to Hagar,[23] are produced in a blood dilution of 1 to 20,000; Thierfelder's analysis makes one part hemin correspond to about 162 parts of blood. It is not a sure test, nor convenient, and it is less delicate than other tests. Schumm[2] (p. 10) says that until 1902 he had frequently employed Teichmann's test, but could not recommend it for the detection of blood in stools as it sometimes completely failed, even when quite large quantities of blood were present, and in other cases he obtained a positive result only after many repetitions of the test. There seem to be fewer objections to its use as a test for blood in gastric contents.

SPECTROSCOPIC BLOOD TEST.

This method has long been employed to detect blood in solutions. But, as stated by Boas and Schmilinsky, the apparatus is too expensive and cumbersome for use by the general practitioner, and less delicate than the guaiac test. The cyanide of potassium test of Hofmann[24] and the hemocromogen test as employed by Hoppe-Seyler,[25] are probably the most delicate tests by means of the spectroscope. Jaworski and Korolwicz,[26] Schlesinger and Holst,[27] Schumm,[2] and Grünwald[28] also review the spectroscopic methods. Grünwald particularly advocates the cyanide of potassium test and gives the following table showing the relative delicacy of tests :

	In a Dilution of	
Weber's (his own results)	1: 2,000	(blood solution) positive
Benzedin	1: 150,000	" " "
Hemocromogen	1: 5,000	" " "
Cyankalium	1: 5,000	" " "

But, as shown below, we know that the guaiac test is more delicate than indicated in this table.

Schmilinsky (p. 2145†) gives a simple method of obtaining the blood spectrum by means of the hematoporphyrin method : a number of drops of stomach contents or feces, well mixed with water, are slowly added to a few cubic centimeters of concentrated sulphuric acid. If the solution is placed in a glass dish with plain parallel walls the spectrum can be easily recognized. The test is quite sharp and quickly carried out; if it is negative the guaiac test, which is more delicate, must be applied, so nothing is gained by its use.

† The principle, of course, is that of Hoppe-Seyler, and the sides of the vessel (known as the hematinometer) are 1 cm. apart.

GUAIAC TEST.

The guaiac test, next to Teichmann's, is the oldest clinical test devised for the detection of occult blood. Schönbein [29] discovered the test and established a majority of the facts relating to it; but at the same time His [30] determined many facts regarding the test, and a few years later van Deen [31] as the result of his experiments (published in 1863) proved the delicacy of guaiac as a test for blood, determined many of its limitations, and pointed out its value as a test in forensic medicine. Liman,[32] also, in this year (1863) reviews the work of van Deen and partially that of Schönbein. He made more than 50 applications of the guaiac test to various blood dilutions and other substances. In the past twenty-five years the results of all these experimentors have been many times tested and reaffirmed by various writers.

Schönbein showed that the iron of the blood was the means of transferring the ozone of the ozone-carrier (as (H_2O_2) to the tincture of guaiac. His (p. 213) remarked that the active substance of blood corpuscles, when dried or when a solution is heated to boiling, does not lose the quality of causing the blue color to appear; he heated a solution of blood corpuscles to boiling, then caused complete coagulation by adding a drop of acetic acid, and this coagulum, which was then washed with distilled water, still gave a blue color with guaiac and H_2O_2, and even the colorless filtrate gave a weak color reaction. His found that there was no difference between the activity of venous and arterial blood in causing a blue color on addition of tincture of guaiac and H_2O_2; but he found that no color appeared if the ozone bearer (Ozonträger) was first added to the blood solution and then the tincture of guaiac; but if to this mixture H_2O_2 was again added, a blue color quickly appeared. Schönbein (p. 213) found that pure blood serum caused no color change with guaiac, and washed fibrin only a slight reaction; bile and saliva gave an uncertain cloudy blue; chyle, fresh milk, casein (action destroyed on boiling), milk, sugar, epidermis, gastric mucosa, pancreas and liver substance, all gave a doubtful color; egg albumin, long macerated raw flesh, and fresh urine no reaction; fat and connective tissue, uric acid and urea a weak color.

Schönbein and van Deen both applied the guaiac test to a large number of metallic substances and the following are the chief preparations mentioned by van Deen: the oxide and sub-carbonate of iron gave negative results; the ferrous salts and sulphide of iron gave a slight degree of color reaction; the acetates and citrates and chlorides, particularly the latter, gave this reaction in more marked degree; the subacetate and sulphate of copper gave slight reactions similar to that of old blood; some of the reactions though not typical were sufficient to confuse; other copper salts, the red oxide of lead, coloring matters, as carmine and logwood, also sandal wood, all gave negative results.

In one of the many experiments with blood and guaiac van Deen found that when a portion of a three-year-old dried blood-cake (of calves) was mixed in water to a dilution of at least 1 to 40,000, the guaiac and old oil of turpentine still gave a positive reaction, though it was necessary to wait some moments for the blue color to appear; he found the test was equally sensitive for old or fresh blood. Liman [32] (p. 205) obtained no perceptible guaiac reaction in a blood dilution of 1 to 40,000.

It is surprising that, after so much experimentation with guaiac as a blood test, little mention was made of it till Vitali [33] published his paper in 1887. Then followed articles by Brücke [34] (1888) and Schuster [35] (1890). Vitali [33] found the test reacted to pus as well as blood. On account of the many exceptions to its use as a blood-test it had little clinical value till modified by Weber [36] in 1893. Weber found that by making an acetic acid ethereal extract, practically all the substances which may interfere with the test for blood are eliminated, particularly the preparations of iron, pus, saliva, milk and starch, or their action much weakened as in the cases of greens, spices and bile. The presence of bile in stools may obscure the trace of blue or green by brown shades when the amount of blood is small, and especially if bile is in excess. Schumm's method (see below) overcomes this objection. Brandenburg [37] found that when guaiac was added to pus it gave a blue color reaction without the addition of an ozone-bearing substance. Brandenburg found this reaction with pus was due to the nucleo-albumin which was precipitated by acetic acid, and that an acetic acid ethereal extract of *pure* pus gave no color reaction with guaiac; so that pus does not interfere with the blood test by Weber's method.

Besides the writers mentioned, many others have contributed to the knowledge of this test, including Kuttner,[3] Boas,[38] Boas and Kochman,[5] Schaer,[39] Hartmann,[40] Joachim,[41] Carlson,[42] Ewald,[4] and Mathieu and Roux,[43] and in this country within the past four years, Steele,[13] and Steele and Butt,[14] Benedict,[44] * Tileston,[17] White [18] and Cowie.[45]

Although Kuttner [3] had, in a measure, indicated the value of detecting small amounts of blood in stomach contents, Boas was the first to make general applications of the test for occult blood in affections of the gastro-intestinal tract.

The following are Weber's original directions: (1) A plentiful portion (about 5 gm.) of feces is rubbed up with water, (2) a portion of this mixture is treated with one-third volume of glacial acetic acid and (3) extracted with ether. (4) After clearing, a few cubic centimeters of the ether extract are poured off and to this are added about 10 drops

* Benedict's modification of the guaiac test consists in adding to about 2 to 5 gm. of feces (diarrheal consistency) an equal amount of gasoline, then add about 1 ccm. fresh tincture of guaiac and an equal amount of old oil of turpentine. If blood be present, the gasoline, (which rises above the emulsion of feces, guaiac and turpentine) is colored green or blue according to the amount of hemoglobin present. Benedict claims for the test avoidance of delay and the spurting incident to the ether acetic acid extraction. The ingredients may be added in any order. The same objections, however, obtain with this test as with the original van Deen test.

of tincture of guaiac (see below) and (5) 20 to 30 drops of old turpentine. If blood be present the mixture turns to a blue-violet; if absent, a red-brown, often with a tinge of green. The reaction is more plain if some water is added and the color extracted with chloroform.

Cowie [45] has modified Weber's test by adding an equal amount of distilled water to the acetic acid ether extract, and thoroughly shaking, before adding the guaiac, and claims for this method a greater delicacy than any other modification of Weber's test; *e. g.*, Weber, by guaiac, obtained a positive reaction for blood in stools after ingestion of 3 gm. of blood, while Cowie was unable to verify this by Weber's test, yet with his "water modification" he was able to get a *distinct reaction after the ingestion of 0.5 gm. of blood.* Cowie, like Boas, adds a few granules of powdered guaiac to the ether extract, instead of preparing the customary guaiac tincture; when the guaiac is dissolved, the oil of turpentine is added.

In the comparative tests given below, the following method was employed:

1. About 5 ccm. of liquid gastric contents or 3 gm. of feces (the feces should be thoroughly mixed and made fluid by rubbing up with a little water) are mixed with one-third the quantity of glacial acetic acid.

2. Extract with about 10 ccm. of ether. To avoid the emulsifying action of ether, instead of shaking the tube, it should be slowly inverted several times.

3. *A piece of clear brown gum-guaiac about the size of a cherry is crushed and then dissolved in a test tube half full of alcohol (or ether, see below). This tincture should assume a light sherry color. Green oxidized portions must not be used.

4. To perform the test, about ½ ccm. of the guaiac tincture is added to about 5 ccm. of the acetic acid ether extract and to this 1 ccm. of a 3% peroxide of hydrogen (the usual commercial strength) or an equal amount of old oil of turpentine. (The H_2O_2 may be added to the tincture of guaiac first, when, if the tincture is strong, it may turn milky, but this is clarified on addition of the ether extract. This procedure serves as a control on the guaiac.)

In the presence of blood, a blue color quickly develops, which deepens, and in two or three minutes gradually fades to a pale blue and disappears; in the case of feces the disappearing color is sometimes a faded green. In fecal extracts, also, various shades of purple, purple-brown or red-brown frequently replace the blue, and with small traces of blood even a green shade. This green shade may never result from pure blood solutions, but I am convinced this sometimes occurs with fecal extracts, as I have seen cases where only a green shade occurred with the guaiac when the benzedin and paraphenyldiamin tests were clearly positive. As much difference of opinion prevails as to what colors, other than shades of blue, result from the presence of blood, shades of green should not be considered positive when a more delicate test is negative. When peroxide of hydrogen is used two layers form and the color reaction appears in the upper ether layer. H_2O_2 seems to give a somewhat quicker reaction and Boas found it more delicate. Oil of turpentine may mix with the ether extract, the color appearing throughout the mixture, but it usually settles to the bottom where the color appears. It was suggested by Schmilinsky [10] (p. 2146), and recently by Cowie,[45] that a color scale may be arranged so that the guaiac test could be used quantitatively, but the writer believes that color changes can only be used in a rough and general way to estimate the quantity of blood, and, as Clemm [11] (p. 377) states, such a scale is inconstant and not worth the tax on the judgment.

Should an emulsion form in making the ether extract it can be broken up, as pointed out by both Schmilinsky [10] (p. 2146) and Schumm [2] (p. 19), by adding a few drops of alcohol and giving the tube a few turns. The latter author claims that Boas's [7] warning that alcohol itself may cause color changes cannot be accepted, as in 1,000 applications of the test he used strong alcohol many times for this purpose and never noted this occurrence.

If the stools contain much fat it is better first to extract with ether, as recommended by Boas and Rossel,[9] before making the acetic acid-ether extract, as the guaiac reaction is thus made clearer. (There is no danger of losing blood, as hemoglobin in a neutral or alkaline medium is not absorbed by ether.) If there is much hydrobilirubin or vegetable coloring matter present, the writer has found the guaiac test much improved by first extracting with alcohol-ether (equal parts), instead of ether, which removes not only the greater part of the free fat and fatty acids but much of the coloring matter as well but not of the blood. (See also Schumm's method below.) Boas, White and Cowie believe the fat extraction is not often necessary.

When turpentine is used as the oxidizing agent it should be perfectly pure and clear (as Mercks) and before ready for use should be exposed to the air in an open dish and in a dark place for at least a month; afterward it should be kept in a bottle uncorked, or only lightly protected with cotton. It should not be left in strong sunlight, for Schumm [2] (p. 20) has seen turpentine thus treated give an intense blue with the plain tincture of guaiac, and I have seen such a specimen give a tinge of green-blue with guaiac.

Guaiac resin for testing purposes should be clear brown or wine color. A large piece 4 or 5 inches through (if possible) should be obtained, and a clear piece broken off when needed for use. Any oxidized (green) portions should be thoroughly removed, as these without the presence of blood may give color reactions; and for this reason guaiac, for testing purposes, should never be kept in the powdered form, as every particle becomes oxidized and untrustworthy for blood tests. Guaiac may be dissolved in either alco-

* As the following tests were begun by Weber's old method it was continued throughout, but the method used by Boas of adding a few grains of fresh guaiac directly to the ether extract and then adding the oxydising agent is fully as delicate and more simple.

hol or ether. It dissolves more readily in alcohol and is better for immediate use — it should be prepared about every hour. If a solution of guaiac is to be kept on hand, an ethereal tincture must be made, as this remains active for months.

The writer has not found the ether solution as satisfactory as the fresh alcoholic tincture, and the green residue which forms around the rim of the bottle may be a source of error in the former. The best method, as already mentioned, is to add a few bits to the ether extract with each test.

It is customary, before testing for occult blood in the stools, to place the patient on a special meat-free diet. Sometimes, however, it is important to make occult blood tests without any change of diet. It is thus necessary to know how much and what kinds of meat will usually give a positive reaction.

It is generally stated that red meats* in moderate quantities, eaten once daily, will sometimes give positive guaiac, and that cooking, though it does not prevent, lessens this reaction, and also that fish, fowl and ham do not give a positive test even if eaten in considerable quantity. Eggs never interfere with the test.

I have often examined stools of patients who had been on a mixed vegetable and meat diet, but never obtained a positive reaction by Weber's test in any case in which blood was absent. This agrees with Cowie's statement (p. 412) that an ordinary meat diet seldom if ever causes a reaction for occult blood. Cowie (l. c.), however, obtained a clear, positive guaiac reaction after the ingestion of 10 gm. of scraped raw meat, but no reaction when smaller amounts than 10 gm. of scraped raw meat had been ingested. (Further meat experiments under benzedin.)

As to the action of the guaiac test on crude drugs, the various preparations of iron, etc., probably little can be added to what was stated by Schönbein and van Deen and Liman 50 years ago; but the acetic acid ethereal extract of the stools prevents all drugs, probably, from interfering with the guaiac test for blood, and Weber [36] (p. 443) himself found of 67 medicines administered in various combinations to patients, that the acid ether extract of stools of these patients gave no action with the van Deen test. By the same method stools gave negative results after ingestion of milk; the ether acetic extract removed cause of error in presence of milk, pus, saliva or spices; and greens or bile caused less confusion when van Deen's test was performed by Weber's method.

The blue shade one obtains by the action of the guaiac test on Blaud's mass and on the tincture of chloride of iron very quickly disappears, though it is very like that produced by old blood. When Blaud's mass is treated with acetic acid, water added and shaken with ether, the ether extract gives no reaction with guaiac. I have many times applied Weber's test to stools which were black through administration of Blaud's pills, the dose often being 30 gr. daily, and in the absence of blood no positive action was ever obtained. Steele and Butt [14] found, also, that ferric carbonate, 30 gr. daily, and ovoferrin and peptomangan in daily doses of 1½ oz. failed to give a reaction similar to blood by Weber's test. It is safe to consider that *no* drug in therapeutic doses will give a reaction by Weber's method which may be confounded with blood. The delicacy of guaiac as indicated by various writers is given in the following:

		In 1 gm. of Stools * with Blood Content of	
Boas & Kochman	+ guaiac	0.0008	gm.
Schloss (p. 275)	+ „	{ 0.0008	„
		{ 0.0006	„
Hartman (p. 51)	+ „	0.00005	„ to 0.00001
Cowie (p. 419)	+ „	0.00035	„
Clemm (p. 377)	+ „	0.001	„
Schmilinsky (p. 2146)	+ „	0.01	„

+ equals positive.
* Or stomach contents.

Schloss (l. c.) was unable to confirm Hartmann's results either with guaiac or aloin, though Cowie [45] (p. 422) is inclined to believe the results of all correct. Schumm and Remstedt [52] (p. 993) obtained a barely positive guaiac solution of blood in water of 1 to 100,000; when 8 ccm. of the solution was used.

Schumm's [2] (p. 26–29) modification of Weber's test is performed in this way: About 4 gm. of feces (portion, size of walnut) is thoroughly rubbed up in a glazed porcelain mortar with 30 ccm. of alcohol-ether (equal volumes); the contents are then transferred to a clean coarse filter placed in a funnel (the filter should be unplaited and about 12 cm. in diameter); the residue in the cone is again treated with alcohol-ether (30 ccm.) and assisted in running through by stirring with a glass rod; when the filtration is completed some plain ether is poured over the filter and stirred as above, and when the ether has filtered off the residue is washed once more with ether. This process, in a *neutral* or *alkaline* mixture, usually removes the coloring matter, neutral fats and free fatty acids (soaps are not removed by neutral alcohol-ether), and it likewise removes the water present. Four cubic centimeters of glacial acetic acid are next added to the residue on the filter and gently but thoroughly worked through by means of the glass rod. Then 4 ccm. more of acetic acid are added and the stirring repeated, and when a greater portion of the acid has drained off, the combined acid filtrate is again poured over the cone and allowed to thoroughly filter. A number of cubic centimeters of the acetic acid filtrate is diluted with two or three times its volume of ether, and to this is added a half volume of distilled water, and the mixture shaken. If separation does not occur, add some alcohol, or ether, or water. The acetic acid ether extract is now tested in a thoroughly clean and dry † or alcohol-washed test tube. In the presence of hematin there appears in a short time a more or less clear violet-blue, red-violet or green-blue. Another portion of this extract may be used for spectroscopic examina-

* See experiments under benzedin.

† Cowie [45] insists on dry test tubes, as both he and his assistant, Dr. Roche, have obtained a positive guaiac (clear blue) when dry test tubes were used, and a negative test with the same specimen when tubes were not dry.

tion. In the case of liquid stools the procedure is the same, only a larger amount is taken and stirred up with about four times the quantity of alcohol-ether. If the stool is acid in reaction it is first treated with a number of drops of concentrated sodium carbonate solution, and then with the alcohol-ether.

Schumm claims great delicacy for his method. The writer has made few comparative tests with this process, but in the cases where tried, the colors were not only more clear and intense than with the guaiac test by Weber's method, but likewise when other test-agents, as aloin or benzedin, were used. The respective color changes were greatly enhanced when an extract of the specimen was made as directed by Schumm. Were it not a time-robbing procedure, Schumm's method would meet about all the requirements for a clinical test.

ALOIN.

Aloin was first described as a blood test by Klunge [46] twenty-five years ago, later by Rossel [9] and then by Boas, [47] Koziczkowsky,[48] von Torday,[49] Petrachi [11] and others.

For a time it seemed that aloin might displace guaiac because of its greater delicacy and reliability. In the past two years, however, it has been less recommended and some recent writers, as White and Cowie, have concluded from their experience that it is probably less delicate than the guaiac. Koziczkowsky obtained a positive aloin reaction in a mixture of 0.025 gm. of blood with 2 gm. substance and Cowie [45] (p. 415) obtained positive aloin with 0.02 gm. blood to 1 gm. of feces, and a questionable reaction with 0.005 gm. to 1 gm. of feces.

The preparation of the material for the aloin test is in all particulars the same as for the guaiac test. Oil of turpentine is better than H_2O_2, inasmuch as the reaction is more clear. To prepare the aloin solution, a portion of the powder (a good preparation, and the one used in these tests, is that of Parke Davis) is placed in a *clean* dry or alcohol washed test tube — sufficient to fill the bottom of the glass — and to this is added about 10 ccm. of 75% alcohol (aloin is scarcely soluble in ether, only about 1 to 500); when the solution becomes yellow it is ready for use. The test is then performed throughout as with guaiac, using the same proportions of reagents. Aloin solution should be made fresh, as after standing about half an hour it usually assumes a pink or slightly red color which is increased on addition of old turpentine.

The color change in a positive reaction is a pink or slight red to deep cherry red, or, in extract of stools, a red wine color. The color reactions are not as prompt as with guaiac and in the presence of only small amounts of blood the red color is not distinct for ten or twelve minutes. If the color only appears after fifteen minutes or more it should not be considered positive, as this sometimes occurs in the absence of blood. By adding a drop or two of chloroform the appearance of the color is hastened.

When the aloin solution, ether extract and oil of turpentine are mixed, by lightly shaking, the aloin solution usually sinks to the bottom where the color changes occur, but sometimes, as pointed out by Koziczkowsky (p. 1199) and Steele, the mixture becomes uniform, particularly if the aloin solution is made with strong alcohol (95%).

Ninety-eight occult blood tests were made with aloin and compared with an equal number of guaiac tests performed as suggested by Weber. Fifty-one of these comparative tests were made in stomach contents, and in three of these cases, in which the guaiac test was negative, the aloin test gave slight red color in five to fifteen minutes, and in each of these three cases the phenyldiamin test was positive. On the other hand, in a case of hyperchlorhydria with free HCl 0.26%, the guaiac test gave a slight blue, while the aloin test gave only a very slight pink, not distinctly positive (in this case the paraphenyldiamin was positive and likewise the benzedin). In another case the guaiac test gave a slight *red*, the aloin a slight pink in about twelve minutes, which did not increase, and the paraphenyldiamin was slightly positive. In one specimen of urine the guaiac test was doubtful (slight green tinge), a pink color appeared with the aloin and the paraphenyldiamin was positive. In the other urinary tests the guaiac and aloin agreed, except in one specimen in which the guaiac test (slight tinge of blue) as well as the phenyldiamin were positive, the aloin was completely negative. In two specimens out of forty-seven stools the guaiac test was negative, while the aloin gave a slight pink and the phenyldiamin was positive; in the remaining tests there was no discrepancy between the aloin and guaiac tests. The above results indicate that the guaiac (Weber's modification) and aloin tests are about equally delicate. (Further comparisons under phenyldiamin and benzedin.)

PARAPHENYLDIAMIN TEST.

A new and very delicate reagent for detection of occult blood has recently been introduced by Boas.[50] It was originally employed by Storch [51] in detecting pasteurized milk. The reagent consists of a very dilute solution (about 1 to 200) of paraphenyldiaminchlorhydrate with the addition of peroxide of hydrogen. With unheated milk the reagent gives an indigo blue, and the whey, as it separates, shows a violet and brown; in pasteurized milk the test gives a blue-gray color.

This test with certain modifications has been found by Boas a reliable and more delicate test for occult blood in feces than guaiac or aloin, but not so sensitive as benzedin. He states that for months he used it exclusively as a blood test, but believes the other methods should be retained as control tests in cases of doubt.

To perform the test according to Boas the stomach contents or feces are prepared much as with the aloin and guaiac tests, except that a smaller amount of acetic acid, about 20 drops, is added to the contents and extracted with ether as in the guaiac test; to 2 or 3 ccm. of this ether extract add 1 or 2 drops of a very dilute solution

(1 to 100) of a paraphenyldiaminchlorhydrate; to the mixture is added 1 ccm. of a half normal alcoholic potassium hydrate solution, and then 10 to 15 drops of a 3% H_2O_2. Upon slight shaking there appears almost momentarily in the bottom of the reagent glass a characteristic olive green (or blue-green) color, but especially characteristic is the olive green ring between the layer of ether and peroxide of hydrogen; the upper layer shows a more or less violet color. The green color is very transitory and, according to the blood content, quickly changes into a more or less deep violet. In the absence of blood the green color is either very faint or does not appear at all. If the stools are deeply tinged with bile or hydrobilirubin, they should first be extracted with alcohol-ether.

Following the directions of Boas, I applied this test to 103 specimens of gastric contents, stools and urines, at the same time making comparative tests with both guaiac and aloin, and in 43 of the specimens additional comparisons with benzedin. In no specimen where I obtained a positive reaction with either Weber's or the aloin test did I fail to get some degree of reaction with the phenyldiamin. In 11 of the cases where the latter was positive, Weber's test was negative, and in 7 of these the aloin test was negative. In a majority of these 11 cases the transient green ring, which Boas terms "extraordinarily characteristic," was absent, and in such cases a diffuse light green tinged with yellow appeared, quickly changing to a weak dirty brown or washed-out violet. I have considered as negative those reactions of phenyldiamin where no green shade was discernible in the beginning of the color changes. In stomach contents less discrepancy was found between the results of this test and those of aloin and guaiac than was the case in feces. Almost invariably when the phenyldiamin gave a positive reaction with gastric contents, the guaiac gave a clear blue and the aloin a distinct red.

The phenyldiamin test was never positive when the benzedin was negative, but it was negative six times when the benzedin was positive.

Schumm and Remstedt [52] have recently modified the procedure as carried out by Boas in the following way:

To the fluid under investigation are added only 2 drops of a 1 to 200 solution of paraphenyldiaminchlorhydrate, then 1 ccm. of about one half normal alcoholic potassic hydrate, then 1 ccm. of a 3% peroxide of hydrogen, and last of all are added a few drops (about five) of a dilute acetic acid. A newly prepared watery solution of freshly defibrinated human blood tested in this way shows in a moment an olive green color which gradually turns to brown red. In such a solution these writers found this test to be somewhat more delicate than the guaiac, and claim they were able to determine blood when in a watery dilution of 1 to 100,000 when 8 ccm. were used; on the contrary, if the acetic acid was added before the potassium solution the test failed in a blood dilution of 1 to 40,000 — no greater than the delicacy of the guaiac test, determined long ago by van Deen.[31] Schumm and Remstedt [52] never obtained a positive reaction in the stools by means of this test when Schumm's modification of Weber's test was negative or only suggestive. I have made no systematic comparison with this modification of the phenyldiamin test, but the test is delicate and it might be preferred to Boas's method, if only on account of the readiness with which the color changes are detected at the *top* of the solution. There is no ring formation, but in very minute quantities of blood a light green color almost immediately appears and gradually diffuses toward the bottom of the tube, and in the meantime the various shades of violet (as described above) have begun to appear. Schumm and Remstedt (p. 994) mention that in weak dilutions of blood the olive green may not appear, but only a red color. This is easily demonstrated in a watery solution of blood.

BENZEDIN TEST.

Benzedin was first described as a color test for blood by O. and R. Adler [53] in 1904, and is the most delicate of all the clinical tests for occult blood. Of the many chemical combinations (amido bodies, phenols, amido acids, naphtholine and diphenyl groups) with which they experimented, they found that benzedin, of the diphenyl group (H_2N-C_6H_4-C_6H_4-H_2N), in a saturated alcoholic solution, and with the addition of peroxide of hydrogen, determined the presence of blood in a dilution of 1 to 100,000 (0.001%). Schumm, however, found the limit of delicacy 1 to 200,000, when he used 8 ccm. of a fresh watery dilution of human arterial blood. It would detect 0.00004 gm. of blood. The guaiac test under equal conditions he found required eight times this strength of blood solution to give a reaction (detecting only 0.00032 gm. blood). He claimed the delicacy of the reaction depended upon the quality of the benzedin used; he employed Mercks "benzedin purissimum," but he had obtained *commercial preparations of "benzedin puriss," which were not so delicate as the guaiac test.* Schumm's results are easily verified. I have found that fresh human blood (hemoglobin 100%) in a dilution of 1 to 200,000, by volume, gives a clear pale green, with an acetic acid solution of benzedin and H_2O_2 in one minute, turning to a pale red in 8 to 10 minutes. If the blood solution is first heated to boiling and the benzedin reagent added while the blood solution is hot the color changes are very rapid, almost instantaneous, but the green color is not so evident, and the red shade appears within half a minute. If the blood is first treated with glacial acetic acid or HCl and then diluted, the color changes seem not so distinct as with pure blood solutions, yet gave a positive benzedin in a dilution of 1 to 175,000. Boiling the acetic acid blood solution lessens the power to cause color changes. Siegel,[54] and Schlesinger and Holst,[27] and Schumm,[55] also review the subject of benzedin and report their investigations, but Schlesinger and Holst materially modified the test recommended by A. and O.

Adler and gave it a distinct clinical value, which the original test did not possess.

The Adlers [53] employed benzedin as follows:

I. For urine, 10 or 15 ccm. are treated with a half volume of acetic acid and extracted with ether. On adding to the ether extract some saturated alcoholic solution of benzedin, with peroxide of hydrogen, the usual green color appears in the presence of hematin.

II. For feces, a small quantity is mixed with some water and to 3 ccm. of the unfiltered mixture is added 2 ccm. each of freshly prepared benzedin solution and peroxide of hydrogen, and three or four drops of glacial acetic acid. The presence of blood causes an intense green.

These authors, although they point out that certain oxidized ferments (indirect oxydases) in the presence of peroxide of hydrogen can be destroyed by boiling, do not mention this procedure in their directions.

Schumm [2] (p. 14) in applying the test to feces, according to this method found the reaction too delicate for clinical work.

Schlesinger and Holst, by modifying the original test, overcame the extreme sensitiveness and yet kept it beyond the delicacy of all other tests for occult blood in feces. Their method is as follows:

I. An approximately saturated solution of benzedin is made by adding a knife-point full of benzedin to about 2 ccm. of glacial acetic acid in a *clean* test tube; shake and set aside; the benzedin soon becomes dissolved. The solution is better if made fresh, though it is active after many days.

II. A piece of feces about the size of a pea is stirred up with a clean glass rod in a test tube about a fifth filled with water (test tube about 10 cm. long). The tube is then lightly closed with a stopper and the mixture brought to a boiling point over the flame. (The boiling destroys the activity of the enzymes.)

III. About 10 or 12 drops of the concentrated acetic acid solution of benzedin (I) is now poured into a clean test tube and 2½ ccm. to 3 ccm. of a 3% solution (ordinary commercial) hydrogen peroxide. A reagent is thus prepared which will not only serve as a control on the chemicals, but likewise on the reagent glasses.

IV. To perform the blood test we pour into the reagent (III) one to three drops of the boiled feces mixture (II) after lightly shaking it.

In the presence of blood there develops a beautiful green, blue-green or blue. The greater the blood content the more predominant is the blue. The appearance of the color-change in a case where the aloin test would be positive occurs in a few seconds, while in the presence of only a slight amount of blood ¼ to ½ minute is required. The time varies, but Schlesinger and Holst [28] state, and it is easily demonstrated, that even in the case of minute traces of blood the beautiful green color always appeared within two minutes. (Further description of color changes in Table I a.)

Following the modifications of Schlesinger and Holst [28] I have made 107 applications of this test (stomach contents, feces and urines), nearly all of which were in comparison with the aloin, guaiac and phenyldiamin tests. (In all the experiments I used the benzedin purissimum of Merck, Germany.) It is also important that the H_2O_2 should be pure, as I have found two preparations of peroxide of hydrogen which invariably gave a green color when added to the benzedin solution alone. "Dioxygen" of the Oakland Chemical Company and H_2O_2 of Parke Davis do not cause a green color with a pure solution of benzedin in glacial acetic acid.

In 36 of the specimens (gastric contents and feces) all four tests were applied to each specimen, making in all 161 applications (as in 17 of the specimens the benzedin test was applied both before and after boiling). In 12 of these series the results were uniformly negative with all the tests, five of the specimens were stomach contents, 7 were stools, obtained when the diet had been meat-free for at least three days. (These results demonstrate the importance of a negative benzedin test, and the amount of time it is possible to save in routine work where benzedin is applied first, as the whole test, including the preparation of materials, can be performed within two minutes.) In the gastric contents of one case, where the benzedin and phenyldiamin were distinctly positive the aloin was negative, but the guaiac showed a slight green developing in less than a minute, then disappearing; but in two specimens of stools the benzedin, phenyldiamin and aloin were positive, while the guaiac was negative. In one of these cases the aloin became a light red wine color at the end of 15 minutes, in the other a slight red in 10 minutes, and in this case the aloin and guaiac tests were repeated three times.

In 32 specimens of gastric contents the benzedin test was negative in 16. In 6 of this series the test was *positive before* boiling and *negative after* boiling the contents. This may show that enzymes * as secreted and under certain condi-

* In connection with these examinations of the gastric contents, the benzedin test was applied to the following preparations:

\+ = positive.
— = negative.

Preparation.	Age of Specimen.	How Treated.		Benzedin Test.
From one manufacturer:				
Scale and powdered pepsin.	Three years old.	Not boiled.	—	
Scale and powdered pepsin.	Fresh from manufacturer.	Not boiled.	—	
Pancreatic powder	Fresh from manufacturer.	Not boiled.	+	
Pancreatic powder.	Fresh from manufacturer.	Boiled.	—	
Pancreatic powder.	Fresh from manufacturer.	Not boiled.	—	With acetic acid ether extract.
Essence pepsin.	Fresh.	Not boiled.	—	
From another manufacturer :				
Peptonizing powder (from tubes)	Fresh.	Not boiled	+	Deep green blue.
Peptonizing powder (from tubes)	Fresh.	Boiled.	+	Distinct green.
Peptonizing powder (from tubes)	Fresh.	Not boiled.	+	Distinct clear green with acetic acid ether extract.
Peptonizing powder (from tubes)	Fresh.	Boiled.	—	With acetic acid ether extract.

tions give a positive benzedin. In these cases the green color reaction was usually very light, however, and slow in appearing, though usually within two minutes. The tests were carried on side by side and six drops each were used of boiled and unboiled contents. When 1 ccm. or 2 ccm. of boiled contents are added to the reagent a light green may develop in cases where 2 or 3 drops cause no color change. The test may be negative in *unboiled* gastric contents not only when HCl is absent, but when the free HCl content is high.

In 22 specimens of stools 10 benzedin tests were negative and the remainder positive. No definite green color change was found *before* boiling that was absent *after* boiling the specimen, but in nearly all the 10 negative tests color change was wholly absent without boiling, proving that enzymes seldom, if ever, interfere with the benzedin test in stools.

Stools which are suspected of containing blood, but give a negative blood test, should be well mixed and again tested, as a stool may contain portions *passed at the same time*, one of which will give a strong positive blood reaction by all blood tests, and another portion give a negative result with the benzedin as well as all the other tests. Such an occurrence was illustrated in the case of a patient (a woman fifty-two years old) seen with Dr. J. B. Thornton, and presenting a group of symptoms which suggested gastrostaxis* or gastro-enterostaxis. At first the stools were composed of soft and unformed masses, dark blue, or black, then becoming tarry, or very dark. On the fourth day, after sudden cessation of all symptoms, the patient passed a stool which gave both negative and positive blood tests. In this formed stool one portion was brown and gave an intense positive reaction by aloin, guaiac, phenyldiamin and benzedin. Other parts were light yellow (as seen after milk diet), and portions taken from the center of these light colored masses repeatedly gave a negative result with the benzedin, and with all the other blood tests. In some of the masses there had been a slight admixture, giving positive benzedin reaction and perhaps a slight reaction with some of the other tests. This seemed to be such an unusual occurrence that a great many tests were made at different times (and with care) for confirmation. Why the benzedin test could be negative in such a case as this, when, as has been stated by Grünewald[28] (p. 110), a positive test with benzedin was obtained in the stools 2½ *days after ingestion* of a ham sandwich, seems quite inexplicable. Schlesinger and Holst,[27] however, obtained by their method a negative benezedin reaction in stools in one case 60 hours and in another 36 hours following the ingestion of meat, though it was always positive within 24 hours, and in one case it gave a positive reaction 44 hours following the ingestion of 0.5 gm. of blood.

Experiments 1 and 2 indicate the results of the benzedin and guaiac tests when applied to normal stools, after the ingestion of various foods, and the increase in delicacy of either test when applied to the fecal extracts prepared according to Schumm.

EXPERIMENT No. 1.

Day.	Food Eaten.	Time of Stool.	Adler's Benzedin test with Schlesinger's and Holst's Modification.	Benzedin with Schumm's.	Weber's Test.	Schumm's Modified Weber's.	Aloin with Schumm's Extract.
21st and 22d.	Hearty evening meal of very rare roast beef for two days, other meals meat free.	No examination of stool on these days.					
23d.	Food during day: 3 eggs, salt codfish and cream, potato, bread, butter, oatmeal, tea, coffee.	Morning stool.	Strongly positive, specimen unboiled. Positive, specimen boiled. (*a*).		Positive (*b*).		
24th.	Eggs, oatmeal porridge, cream, milk, bread, butter, coffee.	Morning stool.	Positive, unboiled. Positive, boiled.	Intensely (*c*) positive.	Negative.	Positive (*d*).	Positive (*e*).
25th.	Oatmeal porridge, 1 egg, fish cakes, fresh mackerel, cream, milk, bread butter, coffee.	Morning stool.	Positive, unboiled. Negative, *boiled.*		Negative.	Negative.	Negative.
26th.	Breakfast, oatmeal porridge, few baked beans.	Morning stool lost. Stool at 3 P.M.	Negative, *unboiled.*	Strongly positive (*f*).	Negative.	Negative.	Negative.

Preparation.	Age of Specimen,	How Treated.		Benzedin Test.
Holladin.	Fresh.	Not boiled.	+	Strong blue with green tinge.
Holladin.	Fresh.	Boiled.	+	Color diminished, more green than blue
Protonuclein.	Fresh.	Not boiled.	+	
Protonuclein.	Fresh.	Boiled.	—	
Takadiastase.	Fresh.	Not boiled.	—	

It is difficult to show that some of the + reactions with these specimens were not due to blood. We should also expect a positive reaction to any considerable amount of enzyme powder that was active *in vitro*, but this was not the rule; and it may be that the enzymes which yield a positive reaction with benzedin are not always present or active in the commercial preparations.

* H. Wale White: The Lancet, London, Nov. 3, 1906, p. 1189. *Idem.*, Jan. 12, 1907, p. 126.

(*a*) Color change, intense green in three quarters minute, in one to two minutes green changing to black, in three minutes black color has changed to claret-red and no further change in fifteen minutes. On adding more feces solution, claret-red returns through black to green, back through black to red. With the boiled specimen, the same changes occurred as above, only the colors were much less intense.

(*b*) The color change was a light green with red brown in one half minute, green and red disappeared and left a brown which faded.

(*c*) The color change was a clear and intense green with the ether acetic acid extract (Schumm), and with the straight acetic acid extract (Schumm) a very intense green blue.

(*d*) The color change was a suggestion of green, quickly followed by a dark red brown, but when the straight acetic acid extract was used (without ether extraction) the color was a clear blue.

(*e*) The color change was a tinge of red in five minutes with the ether acetic acid extract (Schumm), but on using the straight acetic acid extract a clear red wine color quickly appeared.

(*f*) Color change was a green blue with the straight acetic acid extract (Schumm) and a clear deep green with the ether acetic acid extract (Schumm).

EXPERIMENT No. 2.

On the 8th, evening meal, — cold roast beef, the other meals, meat-free; on the 9th, evening meal, — beef pie, other meals meat-free; on the 10th, eggs, lobster, salt codfish and cream; on the 11th, eggs and asparagus (otherwise on 10th and 11th meals were meat-free). Stools passed on 8th, 9th and 10th not examined. Examination of stools on 11th, thirty-two hours after meal of meat pie, showed both the benzedin and Weber's tests negative. In the case of benzedin the feces solution was unboiled. The stool was then extracted by Schumm's method and both the benzedin and guaiac tests were found clearly positive. Stool passed on 12th, fifty hours after meat pie gave a negative guaiac by Schumm's and only a slightly positive benzedin. Although salt fish fiber gives a positive benzedin the experiment shows it does not cause a positive reaction after digestion.

I have applied the benzedin test (method of Schlesinger and Holst) to various substances with the following results: Raw green vegetables gave a slight positive reaction, though it was not found that they materially interfered with the test, in gastric contents or stools, and particularly in the latter. Raw wheaten flour, corn and oaten meal, potato, carrot, parsnip and squash, all gave a quick positive reaction; when cooked the result was negative with all. All meats, cooked and uncooked, gave a strong positive reaction. Raw fish, fresh, dry and pickled, and shell fish (oysters and clams) gave a positive reaction with benzedin; cooking much weakened the reaction, and the color change was chiefly confined to the tissue substance, the solution showing only a weak green. Cooked lobster, not mixed with the visceral portions, showed no benzedin reaction. After the ingestion of any form of fish the feces usually caused no benzedin reaction, sometimes slightly positive after fresh fish. Eggs, raw or cooked, did not give a positive benzedin. The presence of biliverdin in the urine or feces caused a very strong positive reaction, but bilirubin, hydrobilirubin (or urobilin) as found in the stomach contents, feces or urine, either gave no benzedin reaction at all or only a slight degree of color change.* Blaud's pills give a quick but not intense positive reaction with benzedin, but after ingestion of *Blaud's pills* (30 gr. daily), the feces gave no positive reaction with benzedin (by Schlesinger and Holst's method).

The requirements of any clinical blood-test are accuracy, delicacy and simplicity of application. All of the occult blood-tests embrace one or two of these requirements, but Teichmann's and the spectroscopic tests have already been considered as generally inferior to all others. Taking *guaiac* as a standard, the above comparative tests show the following:

The *aloin* test is accurate and was found about equal in delicacy to the guaiac test, by Weber's method; if, however, a slight distinct tinge of green or a red brown is taken to indicate blood, then guaiac will be found the more delicate test. At first one is likely to be impressed by the singleness of color change in the aloin test; but, on the other hand, the aloin is slow of action, particularly in the presence of small amounts of blood, and, furthermore, we do not have the choice between H_2O_2 and oil of turpentine, — it requires turpentine. The aloin test holds no distinct advantage over guaiac.

The *paraphenyldiamin* test (Störch-Boas test) was frequently found on comparison more delicate than Weber's, and is probably more delicate than any modification of the guaiac test, except possibly Schumm's. Still, the test is not so simple as the guaiac test, and the varying color changes are confusing, and, in examining stools, bile and other coloring matters, are as likely to interfere as in the guaiac test. Apart from its delicacy, I can find nothing to recommend the paraphenyldiamin over the ordinary guaiac test.

Benzedin is by far the most delicate of the occult blood tests. In fact, the objection has been repeatedly raised that it reacts to such minute quantities of blood as to be clinically useless. The modification of Schlesinger and Holst overcomes the objection of excessive delicacy of the test, and renders it more practical and exceedingly simple (it can be performed within two minutes) and also prevents any possible reaction from enzymes. But even this modification may not prevent small amounts of blood (even non-pathological) from giving a slightly positive benzedin sometimes, but practice soon teaches what degree of color change indicates occult blood.

Frequently the benzedin test is negative, and it is for this reason of great value, obviating the need of other tests, and this is particularly true as a test for feces.

A positive benzedin and a positive guaiac would be more trustworthy than a positive benzedin alone, and guaiac is a *safer* test than benzedin for stools where meat has *not* been excluded from the diet.

Benzedin and guaiac together meet every practical demand of a clinical test for the presence of blood.

I am much indebted to Dr. Pratt for important suggestions in the subject-matter of this paper, as well as for facilities offered in his clinic.

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A CRITICAL ESTIMATE OF THE FERMENTATION SPECIFIC GRAVITY METHOD OF QUANTITATING SUGAR IN DIABETIC URINE.*

BY HENRY A. CHRISTIAN, M.D., BOSTON.

Assistant Professor of the Theory and Practice of Physic, Harvard University; Physician-in-Chief to the Carney Hospital.

In 1861 Roberts[1] described a method of quantitating the glucose present in diabetic urine, which he spoke of as " the clinical method," on account of its simplicity and ease of application. His method consisted in determining the decrease in specific gravity of the urine caused by the action of yeast. Yeast fermentation splits up the glucose present and its amount can be determined by multiplying the difference between the specific gravity of the urine before and after fermentation by 0.23. This gives the percentage of glucose present. Roberts compared the results obtained by this with those from other methods of that day for quantitating glucose, and showed the considerable accuracy of his method.

Of late years the method suggested by Roberts has been rather neglected. In its place titration with some form of copper sulphate solution, polari-

*Read in the Section on Medicine of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

[1] Edinburgh Med. Journ., 1861, vii, 326.

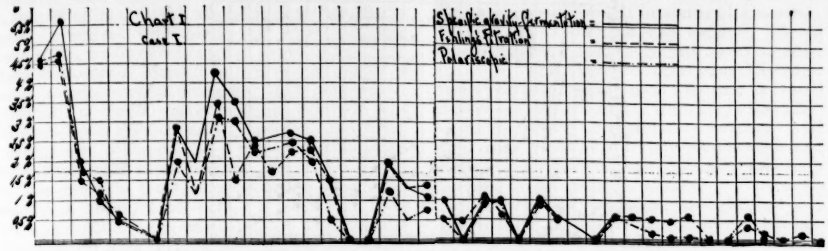


CHART I, CASE I. Results of estimating the sugar in diabetic urine by the three methods.

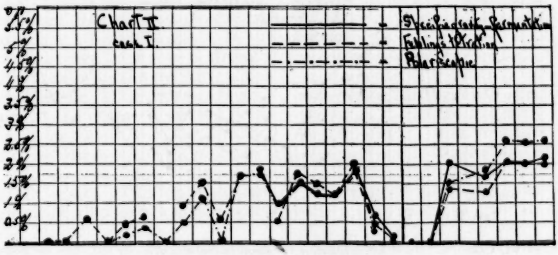


CHART II, CASE I (continued).

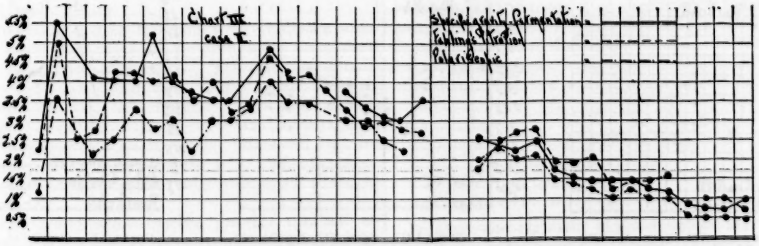


CHART III, CASE II. Results of estimating the sugar in diabetic urine by the three methods.

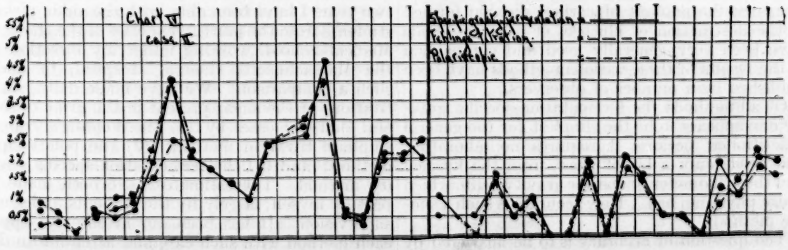


CHART IV, CASE II (continued).

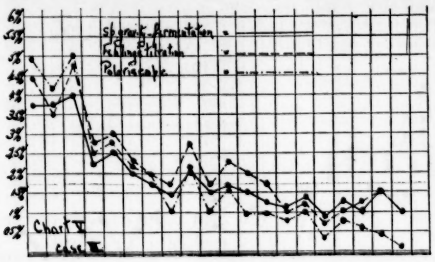


CHART V, CASE III. Results of estimating the sugar in diabetic urine by the three methods.

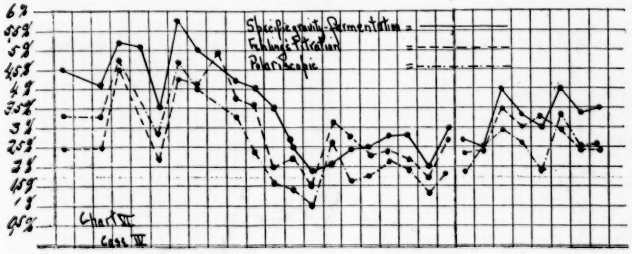


CHART VI, CASE IV. Results of estimating the sugar in diabetic urine by the three methods.

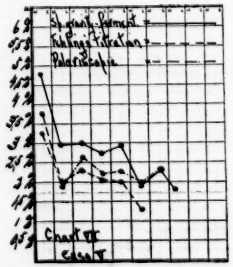


CHART VII, CASE V. Results of estimating the sugar in diabetic urine by the three methods.

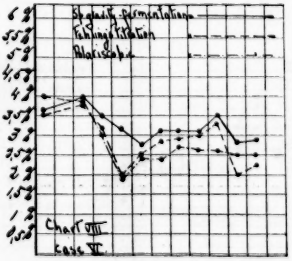


CHART VIII, CASE VI. Results of estimating sugar in diabetic urine by the three methods.

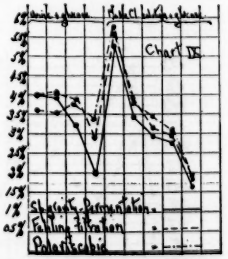


CHART IX. Results of estimating glucose dissolved in normal urine and in 1% solution of sodium chloride by the three methods.

scopic estimation, a fermentation method which measures the amount of carbon dioxide formed in the destruction of glucose, or other methods have been very generally used and comparison of the results of these various methods have been published by a number of observers.

Of all methods the fermentation-specific gravity one appears to be the simplest for the general practitioner, because it requires no laboratory and needs only a bit of yeast from the kitchen and the urinometer or specific gravity bulb, which every physician has. How accurate is such a simple method?

The question of accuracy is to be answered by comparing the results of this method with those obtained with other methods. During the past two years I have been able, with the aid of picked students from the fourth-year class of the Harvard Medical School, working under my direction at the Massachusetts General Hospital, to make such a comparison. We have made daily quantitations of the sugar present in the urine of several diabetic cases by (1) the Fehling's copper sulphate titration method; (2) the polariscopic method; and (3) the fermentation-specific gravity method. The estimates have been made in part by myself, largely by the students under my supervision. It has been our attempt to apply each method with such care and attention to detail as might be expected of a careful clinician

working with adequate laboratory facilities. As a matter of fact, on the whole, more estimates of a given specimen were made and more attention was given to the avoidance of some of the commoner sources of error than it is fair to expect of even a very careful clinician. The polariscopic estimations were made with a Schmidt and Hensch half shadow saccharometer, and these results were controlled by a more accurate polariscope from the same makers.

The results of these estimations are graphically shown in Charts I to VIII. A glance at these shows a quite close agreement in the various quantitations. Chart III, which differs somewhat from the others, is from a case which during the first few days appeared to be excreting both levulose and glucose. At least this supposition would satisfactorily explain the considerable difference between the results of polariscopic estimation and those from the other methods. At the same time the urine on these days gave a strongly positive reaction with Seliwanoff's reagent, which reaction later disappeared. The occasional sudden variations seen in the other curves are probably due to errors in application of the method. All were typical cases of diabetes mellitus of moderate severity. In none was there coma or evidence of impending coma. The quantitations represent the per cent of glucose in a mixed specimen from the total 24-hour amount.

Chart IX shows the results of quantitating (*a*) normal urine to which glucose (Kahlbaum c. p.) has been added, and (*b*) 1% sodium chloride solution, in which glucose similarly was present. This shows a close analogy to the results obtained in diabetic urines.

To titrate a diabetic urine with Fehling's solution requires a considerable amount of time, care and laboratory equipment. The end reaction is not very sharp, and there is a considerable inherent error in the method. The polariscopic method requires an expensive instrument and the accuracy of the result is influenced by the presence of beta-oxybutyric acid, albumin, levulose and other possible constituents of diabetic urine.

The fermentation-specific gravity method as shown by the charts gives results as good as do the other methods. It is very simple in application, requires no laboratory equipment and involves a minimal cost for apparatus. All that is required is to take the specific gravity of the urine at room temperature, add a small bit of commercial yeast and place in a warm place, such as an incubator at 37° C., a heated room, near a stove or radiator, etc. Active fermentation soon begins and is evinced by bubbles and currents in the urine. When fermentation is finished the specimen partially clears and the evolution of gas ceases. A negative test with Fehling's or Nylander's solution proves the end of the process — 12 to 18 hours is usually sufficient. The specimen is now allowed to return to the room temperature of the previous specific gravity determination, and the specific gravity redetermined. The difference between these two readings, multiplied by 0.23, gives the percentage of fermentable substance expressed in terms of glucose.

A number of specimens were carefully filtered before the second specific gravity determination was made. This made no appreciable difference. The specific gravity bulb used was such as is sold to the physicians at a cost of from fifty to seventy-five cents. Many comparative readings were made, using a more accurately graduated longer specific gravity bulb and calculating the necessary allowance for temperature changes. Here again the differences are very slight, so slight that they might well be neglected. It is, however, important to use the same specific gravity bulb for both readings, since these cheap instruments vary considerably in their 1,000 level. Moreover, the specimen should be approximately at the same temperature at each reading, or a specimen with and without yeast be kept side by side and simultaneous specific gravity readings be made after the completion of the fermentation in the one, as first suggested by Roberts, for any considerable temperature variation will affect the specific gravity enough to change materially the result of the determination. Observing these few precautions, the results obtained are about as accurate as those given by the other two methods. The great simplicity of the fermentation-specific gravity method renders the chance of error in application slight, and it can be strongly recommended to the general practitioner in following the metabolism of cases of diabetes mellitus.

The facts presented above are not new. Yet it has seemed worth while again to call attention to so simple a method of quantitating glucose in urine, and to commend it as a sufficiently accurate method to enable the practitioner to treat scientifically his cases of diabetes mellitus. This is the motive of the paper. An accuracy sufficient for more exact chemical work is not claimed.

THE TREATMENT OF FEVER CASES IN THE PUBLIC SERVICE.*

BY C. A. DREW, M.D.
Medical Director, State Farm, Mass.

DURING the eighteen months ending April 1, 1907, 1,525 cases have been treated in the general hospital department of the State Farm. Of these 1,525 cases, 25 have been primary or secondary cases of lobar pneumonia. Of these 25 pneumonia cases, one died. All the others made good recoveries. Six cases of typhoid fever were treated during this period, all of whom made good recoveries.[1]

During the past three and one-half years, 38 cases of lobar pneumonia have been treated in this same hospital department of the State Farm with 3 deaths,— a mortality just below 8%. During this same period of three and one-half years, we have treated 30 cases of typhoid fever, all of whom made good recoveries.

* Read before the Massachusetts Association of City Physicians, Boston, April 2, 1907.

[1] Six additional cases of pneumonia, each are alcoholic, all of whom recovered, have been treated since April 1, 1907. No typhoid since April 1.

For six years prior to Oct. 1, 1903,— the beginning of our hospital year,— we had treated 63 cases of lobar pneumonia with 21 deaths, about the average mortality, we believe, among intemperate men, and our mortality from typhoid fever had been 3 in 18 cases,— about 16.6%.

Making due allowance for the difference in the type of typhoid fever and pneumonia in different years, and allowing also for a probable difference in the physical condition of patients, a difference in the degree of leucocytosis and a probable difference in the strength of the army of bacterial allies engaged in the assault, still the contrast is marked between a mortality of 33⅓% for pneumonia and 16.6% for typhoid fever in the six years prior to October, 1903, and a mortality of 8% for pneumonia in 38 cases, and no death in 30 consecutive cases of typhoid fever since Oct. 1, 1903. If we note the further fact that for the past eighteen months the mortality in lobar pneumonia has been but one in 25 cases, exactly 4%, then the contrast is even more striking.

We have chosen the statistics of the past nine and one-half years because the writer has been chief of the medical staff at the State Farm during this period. The same trained woman nurse has been in charge of the nursing department during the whole time. With the exception of a competent surgical dresser and male night supervising nurse, the whole nursing force has been made up from men prisoners, without orthodox training, serving time for drunkenness, selected because of a demonstrated kindly disposition and an aptness in caring for the sick. Changes have occurred each year in the personnel of the junior members of the medical staff, but my junior colleagues were just as watchful and just as faithful in carrying out every direction and just as competent in detecting early danger signals when the mortality was 33⅓% for pneumonia and 16.6% for typhoid fever as during the past eighteen months. We cannot say whether the early cases were more or less severe than for the past eighteen months. A systematic blood count, bacterial comparison and differentiation would have added much to the scientific value of our observation, but we are in about the position of the busy practitioner,— our whole medical force is pushed with clinical work and the more scientific laboratory details are often neglected. Basing an opinion on clinical symptoms, I would say that the types of cases have not differed greatly.

Of our last 25 cases of pneumonia, all except 2 had been hard drinkers for years; 4 of the 25 cases were over sixty years of age, and the one who died had cirrhosis of the liver as a complication. In former years our cases must have been nearly all chronic alcoholics, as, with very few exceptions, they were serving time for drunkenness.

We think we have learned something and have modified our treatment. Whether our modified treatment has really made the smaller death rate, only time and added experience may enable us to say. In so far, however, as our limited experience may justify, we feel that we have learned a better way. In the early days we were not inattentive nor nihilistic regarding treatment. We followed the masters in medicine and believed that an abundance of fresh air, attention to the bowels, the most nutritious and easily digested diet, and liberal use of strichnine, digitalis and whiskey to meet heart weakness were our most effective weapons. We held it good reasoning that a man whose nervous system had been accustomed to large quantities of whiskey would be in great danger if he were not given alcoholics in liberal measure when down with typhoid fever or pneumonia. Our nurses were directed to give all the water the patient wanted, but the emphasis was on the whiskey and strychnine, and the water was credited principally as a convenient agent for diluting the alcoholic. In the light of our added experience, we are inclined to believe that the water added to dilute the whiskey was the more helpful part. We knew, of course, that water constituted 70% of the body weight, and of the brain even a larger percentage than the average for the whole body. We knew, when we stopped to think, that water was an important ingredient of the solid organs only in less proportion than in the digestive juices, lymph and blood. We knew how every muscle would shrink, stiffen and weaken under moderate heat by the rapid evaporation of the ingredient water upon which its flexibility largely depends. We knew the dependence of kidneys, lungs and skin and every excreting organ upon the maintenance of the normal fluidity of the vital secretions. Of all these facts we had a theoretical knowledge, and yet we did not fully know, because we did not allow the admitted facts a central place in the field of our consciousness. We did not realize how much the vital functions would be depressed by the too rapid loss of that life-sustaining oxide of hydrogen, known to the medical students as H_2O. If we had fully considered pure water in relation to that mixture of oxygen upon which our life so directly depends, and had remembered that the proportion of oxygen is even less in the air we breathe than in the water we may drink, — then we might not have been surprised to have found the vital forces rallying when reinforced by hot water and sodium chloride, in the proportion of the so-called normal salt solution, even more than when reinforced by the direct inhalation of oxygen or when stimulated by strychnine and alcohol. We do not suppose that water gives up its oxygen as does the air, and we do not suppose the hydrogen of water plays so large a part in the phenomena of life as the active nitrogen molecules in the atmosphere about us, and yet experience seems to suggest that a large quantity of pure water is only second in importance to an abundant supply of pure air when a high temperature and excessive exhalation of water is rapidly shrinking the muscles, and bacterial toxines are testing the eliminating powers of skin and kidneys beyond their normal functional capacity.

We knew, of course, in a general way, the tonic effect of cold and the atonic effect of heat upon all the ganglia of the sympathetic system, as well as upon the great cerebrospinal nerve centers them-

selves. We had been taught of the vaso-motor controlling centers in the medulla and of subordinate vasomotor centers located at different levels in the spinal cord. We had learned that there were vaso-constrictor and vaso-dilator fibers from these ganglia supplying every artery, and not these alone but even, as it is alleged, supplying lymph-vessels and veins. These facts of physiology had a place in our memory, but were crowded from the center of the field of consciousness. The masters in medicine had not laid emphasis upon these physiologic facts and we did not appreciate the therapeutic possibilities to be reached by the multitude of nerve terminals within the fifteen or twenty square feet of skin covering the human body, which may be played upon mechanically and stimulated by heat and cold to re-enforce exhausted ganglia and heart muscles, to accelerate or slow the blood current, to deepen respiration and regulate temperature and even to change the composition of the blood itself, — to which facts Winternitz in Germany, Rovighi in Italy, and Thayer, of Johns Hopkins, and others had testified. The evidence was experimental and seemingly conclusive, but these were not our masters in medicine, and their teachings were little regarded. It remained for Baruch, of New York, and Kellogg, of Michigan, to rouse our interest in the possibilities of hydrotherapeutics to a level at which it could bear fruit. These were they who gave definite instructions to which the value of teaching so much depends.

Baruch's statement, that he had not lost a case of uncomplicated croupous pneumonia in private practice since the adoption of the management of patients outlined in his work on hydrotherapy, would be more forceful if he would give the number of cases treated; but in a lecture delivered to a medical class in Los Angeles some six years later (February, 1904) this teacher repeats essentially the same directions as found in his textbook and adds: " In my hospital service the mortality has been reduced 50%, as shown by 156 cases collected by Dr. Albert Wittson, of New York. The mortality under this newer management has been 12%. Considering the desperate character of the cases brought to the hospital in its ambulances, and the fact that they are sometimes almost *in articulo mortis*, this is not a bad record. . . . In a fairly extensive private practice I may say with some hesitation, but with entire sincerity, that during the past ten years I have been under the necessity of reporting only one death from primary croupous pneumonia to the Board of Health. The number of cases I cannot state, but I am willing to accept the verdict of the New York Board of Health."

We can accept Dr. Baruch's statement at its face value, for we know he has had a large experience, and we believe he is not a physician who " plays to the galleries." The evidence seems to justify the claims of the leaders in hydrotherapy that cold applications to the skin with friction, or the reactions following such application increases hemoglobin and the number of red corpuscles in the blood current and the white blood corpuscles even to a much greater extent. It seems to be proven that hemoglobin may be increased 10% or more, the red blood cells 25% or more, and the white cells, or leucocytes, may be more than doubled by these hydriatric measures.* It seems also that a high temperature has the opposite effect on red and white cells in the blood current. The fact that this marked increase after short cold applications lasts but a few hours, unless the application is repeated, and that it is usually accompanied by a decrease in the size of the spleen lends support to the hypothesis of Winternitz that the red and white corpuscles are released from being pent up in spleen, liver and other vascular organs by stasis of the blood current whereby the red cells are enabled to resume their important function of delivering oxygen and the white cells are again free to battle for the human organism against the bacterial allies, which latter, to borrow from Bunyan and Osler, serve under the banner of " The Captain of the Men of Death."

Such are some of the considerations which lend strength to our faith that we have learned a better way to treat patients down with acute self-limited febrile diseases. Toxemia is the enemy we have most to fear. Our strongest allies are skin, kidneys and white and red blood corpuscles. To expel, so far as possible, the poison in the bowel is our first move in defense. To support our allies with an abundant supply of pure air and pure water all through the fight is of the greatest importance. We believe the amount of water required by the body in health is no fit guide to the amount required when the heat of fever is multiplying the water exhaled and evaporated. To quiet the pain and sustain the heart in penumonia, we apply cold, wet compresses, wrung so they will not drip, and covered with a dry flannel or Turkish towel over the whole chest or over the affected side and changed every hour, or else use the specially designed pneumonia ice-bag, with drainage, planned by Dr. P. A. Aurness, of Minneapolis. This pneumonia ice-bag is a powerful cooling agent and is so constructed that it fits either side equally well. Because of the drainage tube, the melting ice is much more refrigerant than an ordinary rubber bag containing ice water. This may be applied outside of a night-robe or gauze undervest. No patient has complained of discomfort because of this ice-bag, and no patient has failed to receive apparent benefit from its use. I would choose to use the less powerful cold compress in children, and I would take care that this ice-bag was not kept on after beginning resolution in pneumonia, nor from midnight till sunrise after the fourth day when beginning resolution with a rapidly falling temperature may be expected. Dr. P. A. Aurness, of Minneapolis, whose name this pneumonia ice-bag bears, reports more than 100 cases, including five cases of double lobar pneumonia, with no death and without complications to retard recovery. Dr. Aurness uses liberal doses of some mild alkaline mineral water and creosote carbonate every four hours in from five to fifteen

* Rational Hydrotherapy, Kellogg, p. 120.

drop doses besides saline laxatives and saline enemas; also stimulants of brandy, strychnine and digitalis when indicated. By saline enemas, Dr. Aurness may mean enemas of "normal salt solution," which we have found very useful, given warm, when the heart has shown a danger signal.

While Dr. Baruch's plan of cold compresses, frequently changed, has some theoretical advantages, our experience with the Aurness pneumonia bag has been so fortunate and the dry cold so convenient to apply outside of a night-robe or thin under flannel that we doubt if cold water compresses would do better for our adult cases. We are inclined to think the cold compresses, wrung out and applied every hour, as directed by Baruch, are more quieting to the irritated nerve centers, because the cold is quickly changed by the heat of the body to a neutral or warm compress, while the gentle shock, repeated hourly, sustains nerve tone and keeps up tonic capillary dilatation.

If we had a trained nurse with every case, at all hours, we would more often choose the wet compress for theoretical reasons. When the temperature is low and the nervous symptoms very prominent, we would follow Baruch in every detail. When the fever is high, the pain in the side marked, and the nervous symptoms not so prominent, the Aurness ice-bag, in our hands, has been very satisfactory.

If we had small open wards of about six beds each, so that we could reserve one ward for pneumonia and another for typhoid fever and had graduate professional nurses to care for all these infectious cases, then we would count ourselves fortunate indeed. The best we can do under our present crowded condition is to care for each infectious case in a single room, with a capacity of about one thousand cubic feet. Our "natural nurses," with the most humane intentions, are very apt to close the window when the doctor has gone, lest the patient take cold. But in spite of these disadvantages, we think it not too much to hope that we may continue to keep the mortality in croupous pneumonia and typhoid fever below 10%. In indulging this hope we do not forget the statement of Strumpell,* endorsed by other teachers, that "every case of drunkard's pneumonia is to be regarded as very unfavorable."

In conclusion, we have not changed our early opinion that there is no specific for typhoid or pneumonia that can be depended upon, although we are willing to accept an antitoxine when proved and found true. We do not use venesection, tartar emetic, veratrum, aconite, poultices, blisters or wet cups; nor mercurials, except an initial dose of calomel, which may be or may not be better than a saline purge. We have not tested bryonia, phosphorus aconite or arsenic of the homeopathic pharmacopeia, and are not prepared to deny to these drugs a specific action. We do give an occasional small dose of morphine, codein or one of the coal tar products, but, personally, I always feel in the presence of this necessity that our natural weapons of defense have not been well used.

* Text Book of Medicine, p. 186.

In typhoid fever we have used acetozone † quite extensively and have credited it with germicidal and antiseptic properties. We have given this as an intestinal antiseptic, potent, if potent at all, by virtue of the nascent oxygen it gives off when decomposed. Of this antiseptic, we give an ounce of a one-tenth of 1% solution every hour, followed by six or seven ounces of pure cold water, if the patient will readily take that much. Typhoid fever patients rarely object to this solution and commonly take a glass of pure water readily to take away the taste. This we consider an additional advantage. We have repeatedly seen the temperature rise and abdominal discomfort increase when acetozone was omitted and promptly decline when it was resumed. This experience has led to the conclusion that in this organic peroxide known as "acetozone" we have an entirely harmless drug of real value.

It has been held by some that the practical result of giving fever patients liberal hourly draughts of cold water is to rob the blood of its normal salts, coincident with the more active elimination of the toxines of living and dead bacteria. We respect this opinion because it seems to be based on a physiological principle, and we meet the objection by adding the most important salts of the blood to the diet or give them in the form of a mildly effervescing drink. In pneumonia we often add 2½ gr. of sodium chloride, 1 gr. of pot. bicarbonate, and 1 gr. of ammonium carbonate to 4 oz. of cold water, to which solution we add a teaspoonful of lemon juice and give every hour while the mixture is slightly effervescent. By following this with 4 oz. of pure cold water, we think we refresh the patient, assist the skin and kidneys in their eliminating function, keep up blood pressure and sustain the heart. We rarely see the necessity of giving strychnine or an alcoholic till the onset of resolution in pneumonia, and more rarely still do we give an alcoholic in typhoid fever at all. This is about the sum total of our internal medication. The pure cold water we give, and the pure air we try to allow, we count first, and esteem the drugs we give of secondary importance. For nourishment, other than pure water, we depend largely upon milk, which is substituted for cold water once in three hours. If for any reason we use peptonized milk, which we assume is more quickly digested, we substitute the milk every second hour.

It is easy to understand the passive relaxation of the arterioles and capillaries of the skin under a hot poultice, and easy to understand how the load on the heart proper is lightened by the ensuing dilatation of the vessels of the skin. It is easy to understand the temporary relief of dyspnea in pneumonia from hot applications, but not so easy to understand why an ice-bag, a cold, wet pack or cold compress over the lung should ease the load on the heart. Clinical experience demonstrates beyond a peradventure that this is a fact, but the physiological law explanatory of the fact is not so commonly understood. Aur-

† See Note 1 at close of article.

ness testifies that an ice-bag properly made, with drainage, produces "such a vasomotor dilatation, evidenced by an intense hyperemia, as no other means known to science can produce without injury to the parts covered." Baruch quotes from and endorses Woods Hutchinson to the effect that the whole arterial system participates in the rhythmic muscular action of the heart, of which it is a less specialized extension. He accepts the term "skin heart" as used by Hutchinson and holds that cold applications stimulate the vasodilators and increase the force of the rhythmic contraction of arterioles. This increased tonicity of the "skin heart," according to this theory, so greatly increases its propulsive power that the slow blood current in the skin is augmented to the relief of the central heart, and the more rapid elimination of waste and toxines.

It seems likely that the majority of the members of this society may not accept the theory of a "peripheral" or "skin heart." Baruch and Kellogg give a list of the men upon whose experimental work their faith is based. I would especially recommend the careful reading of Baruch's work because it is not only well written but is comparatively brief.

If our experience were your experience, I would think the reading of this paper hardly worth while. In response to the kind invitation of Dr. Gleason to lunch with you and talk to you I read you of those things which have proved helpful to us. We are not wedded to any theory or system of medicine. If the future shall reveal a specific against the Ebert bacillus or the Sternberg-Fraenkel diplococcus, we will welcome it gladly. In the light of our present experience, we hold we can best assist Nature by supplying liberally Nature's own life-sustaining remedies. As an east wind is to the heat-stricken children of the poor in Boston at the end of a torrid week in August, so pure cold water in liberal measure internally and intelligently applied externally * is to the fever-stricken children of the poor at all seasons.

Note 1. Acetozone is a mixture of equal parts of benzoylacetyl peroxide and an inert absorbent powder with a chemical formula of $C_9H_8O_4$. In the presence of water it undergoes hydrolysis and slowly decomposes. Such hydrolysis is said to be necessary to develop its full germicidal activity. This drug is one of the "organic peroxides" in which an excess of oxygen has been combined in such a way that it is somewhat slowly given off in a nascent condition. It is soluble in water at 77° F. in proportion of 1 to 1560.

Note 2. To obtain the best results, cold water given internally to fever patients should be at about 40° F. Cold compresses for adults should be dipped in water as near 60° F. as possible. For children under five, compresses at 80° are better. For children a full bath at 10° below the temperature of the body, with friction prolonged for twenty minutes, is very helpful. This general principle should be observed: the colder the water the shorter must be the application. Water is a potent remedy and may do harm if applied when the body is not in fit condition to react promptly to cold applications. That cold wet or cold dry applications should not be applied when the skin is cold or moist with perspiration goes without saying. When the skin is cold and clammy, the call is urgent for hot, dry flannels.

* See Note 2.

ARTERIO-VENOUS ANASTOMOSIS.†

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My experience in arterial surgery has been obtained in two cases by doing an arterial venous anastomosis for reversal of the circulation. I feel that I have learned from them, although the number is small, certain facts which are worth recording. To make clear these points I will report the essential details of each case.

The first, already published in the *Annals of Surgery* for October, 1906, was that of a man of eighty years with senile gangrene of a portion of the right foot. Physical examination showed him to be a decidedly senile old man, with atheromatous arteries and a systolic heart murmur. No pulsation could be felt in the right dorsalis pedis artery. In May, 1906, he was operated upon. The femoral artery, which was decidedly atheromatous, and vein were isolated in Scarpa's triangle below the origin of the profunda and divided between Crille's clamps or elastic ligatures. The upper end of the artery was then invaginated into the lower end of the vein and the distal end of the artery into the proximal end of the vein. A complete reversal of the circulation was thus established. The technique of the invagination was as follows: Three double headed sutures were passed equally distant through the entire wall of the artery from inside out. The needles were then passed into the lumen of the vein about a quarter of an inch and at this point through its wall. When these sutures were drawn tight the artery was pulled into the vein. Re-enforcing sutures, including only the outer portion of the arterial wall, were placed here and there to catch the edge of the overlying vein to the artery. Number 1 Pagenstecher thread was used for all these sutures. When the controlling clamps were removed there was no leaking at either suture line and weak pulsations in the vein could be felt for a short distance below the anastomosis. There was absolutely no shock shown by the patient and recovery from the operation was satisfactory in spite of the fact that the senile condition of the patient made it difficult to keep him in bed or a dressing on the wound. After the operation the appearance of the leg did not change. There was no edema, dilatation of the veins or cyanosis. The gangrene which existed before the operation spread a little and then a line of demarkation formed. When the foot was later amputated, at the point of election on the tibia, both tibial arteries contained arterial blood. The stump healed satisfactorily but slowly. In March of this year, ten months after the operation, I saw the patient. He had a stump that was well supplied with circulation. There was no difference in appearance or size of this leg and the unoperated one.

Clinically this case was most successful, but the exact meaning of the presence of arterial

† Remarks made before the Academy of Surgery, Philadelphia, May 10, 1907.

blood in the tibial arteries at the time of the amputation I do not know. It seems that the arterio venous anastomosis must have increased in some way the amount of blood in the leg, for it is hard to believe that an amount of blood so small as to permit gangrene of the foot would be sufficient to nourish for ten months an amputation stump only a slight distance above the gangrenous area; and had clots formed at the sites of the anastomoses, it seems most probable that the gangrene would have extended rapidly up the leg instead of remaining localized.

The second case was that of an old woman of sixty years, with senile gangrene of the foot and a portion of the leg. The arteries were atheromatous. She was operated upon during February of this year. The femoral artery and vein were isolated in Scarpa's triangle and divided between clamps or ligatures below the origin of the profunda. The artery was much calcified and was so hard that some force was necessary to drive the needles through it and so brittle that the stitches tore out most easily. The intima formed a distinct lining to the vessel and was much like a second smaller tube inside a larger one. These characteristics of the wall complicated the technique immensely as I attempted to make my anastomosis according to Carrel's method, turning the walls so that at the suture line intima should come in contact with intima. The artery was so much like a pipe-stem that this was impossible, although a conscientious attempt was made. The ends of the artery and vein were therefore cut off freshly and the artery invaginated into the vein, as in the first case, the only difference being in the use of vaseline in this case to smear the ends of the vessels. The distal end of the artery and the proximal end of the vein were then ligated. The vein pulsated after the controlling clamps were removed. Pagenstecher No. 1 was used. There was no shock and no change in the appearance in the leg. Ten days later it was necessary to amputate above the knee for the gangrene which had been present before the operation. During these ten days it had become more pronounced, but its limits had extended only a little. During the amputation the anastomosis was cut down upon and removed. The artery was found filled with a loose, easily detached clot. This case was, therefore, a distinct failure.

From these cases I believe it is perfectly evident that there is no danger in continuing our investigations further, as there is no shock following the operation. Carrel's method is not applicable to a certain number of the cases where the operation is done on old persons with atheromatous arteries. In young persons and on experimental arteries it doubtless is most satisfactory, but as the operation has been proposed to cure conditions dependent upon lack of circulation in the extremities some other technique must be found, as practically all cases, except perhaps some due to trauma, will necessarily be in elderly persons. An objection which may be raised to the invagination method as employed in the above cases is the fact that the divided end of the artery leaves a certain portion of its wall in the blood stream uncovered by intima, which favors clot formation. This method was introduced by Dr. Murphy * in 1897 for the repair of the continuity of an artery and was recommended only after experimentation. The slight modification of invaginating the artery into a vein instead of into another portion of the same artery would seem to me not to invalidate the method. However, as at present, this objection might be raised, I am working on some scheme to obviate this difficulty, but as yet unfortunately cannot report results. Two ways to avoid this have occurred to me. One is by smearing vaseline or some other substance onto the cut end of the invaginated artery to keep it out of the blood stream. The other way was suggested to me by the appearance of the arterial wall in the second case, where the intima formed a distinct layer inside the others and one which remained intact when the others cracked away from it. I have thought that it might be possible to cut the outer layers of the artery a quarter of an inch or so back of the intima and thus leave a greater length of initima as a cuff, the back of which could be covered with vaseline, so that when invaginated into the vein it might stick to the venous wall and cover over the cut end of the outer portion of the artery.

* Medical Record, January 16.

Clinical Department.

GLOTTIC SPASM OF NASAL ORIGIN IN ADULTS.

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SPASM of the glottis of nasal origin in adults, a rare form of reflex laryngeal neuroses, was first described by Hack in 1882, and since that time fourteen cases have been published, making in all but fifteen recorded cases. To these I propose to add the sixteenth, but before doing so shall attempt to give a short résumé of the cases so far reported.

CASE I. Hack.[1] A healthy physician, whose disposition was not at all nervous, suffered at night severe attacks of dysponea, caused by glottic spasm. Examination of posterior nares disclosed a marked congestion of the mucous membrane. After painting the posterior nares with silver nitrate, attacks disappeared for a long time, only to reoccur with the advent of a mild angina. Posterior nares again painted and attacks have not since reoccurred.

CASE II. Heryng reports two cases. Man,[2] forty-nine years old, who had been suffering from spasm of the glottis for three years, the attacks occurring during day and night. Examination of the larynx showed nothing abnormal. Posterior nares and pharynx normal. Anterior rhinoscopy showed polyp in left nares in region of middle turbinate. Polyp was removed and patient was entirely free from symptoms for a year. He then returned, suffering fresh attacks, and on examining the nose a new polyp was found.

This polyp was removed and attacks ceased, and have not since reoccurred.

Case III. Woman,[5] eighteen years old, who had been subject to spasm of the glottis for the past two years. She also gave a history of practising masturbation for two years. Besides spasm of the glottis, she had spasm of the bronchiols. These attacks were so severe that tracheotomy was resorted to, and the canular worn for two months, when it was removed. She soon returned, however, suffering a renewal of attacks, and tracheotomy was again done. Nasal examination was now made for the first time. Larynx and pharynx found normal. On examination of the anterior nares she was found to have a deviation of the septum, hypertrophy of the anterior end of the lower turbinate, right side, and a marked swelling and redness of anterior end of the lower turbinate on left side. Treatment consisted of touching up both turbinates with chromic acid, and during this treatment the canular was removed. Result, patient cured of both glottic and bronchiol spasms.

Case IV. Przedbreski's [3] case was a young woman, eighteen years old, who presented numerous symptoms of hysteria, with anesthesia of the epiglottis. Her attacks occurred most frequently in the evening, and were preceded by symptoms of intense nasal irritation. Larynx and pharynx normal. Septum deviated to the left and marked hypertrophy of the lower turbinate. Her hysterical condition was treated for three or four months without improvement, when the lower turbinate was then cauterized with chromic acid, after which attacks of spasm of the glottis entirely disappeared.

Case V. Soudrille's [4] patient was a brother physician, forty-four years old, who had suffered five or six attacks of spasm of the glottis during the previous fifteen days. During these attacks the face was congested and the hands blue. These attacks occurred at no special time, and without any prodromal symptoms. The examination of larynx and pharynx was negative, but examination of nose showed hypertrophy of the two middle turbinates and a swelling of both lower turbinates. Polyp was also found. Treatment consisted of removal of the polyp and irrigation of the nose with administration of potassium bromide. Result, patient cured.

Case VI. Ruault [6] reports the following five cases: 1. The first case was a woman, twenty-five years old, who had been suffering from these attacks for some twenty-nine months. Her first attack came on soon after her marriage. These attacks reoccurred every six to eight days, and always came on at one or two o'clock in the morning, while the patient was asleep. Her husband remarked that just previous to an attack his wife's breathing was markedly changed. This woman had always been extremely nervous, but presented no real symptoms of hysteria. Larynx normal and pharynx presented the appearance of a chronic catarrh. On examination of the anterior nares the introduction of a speculum was found to be extremely painful. Marked deviation of the septum and swelling of the two lower turbinates and middle turbinate on the right were found. After treatment, consisting of applications of chromic acid to turbinates, patient reported that she was free from all attacks of spasm of the glottis.

Case VII. 2. A woman forty-three years old has been subject to attacks for the past twenty-years. Her attacks date from the time of her marriage and occur sometimes at night and other times during the day, she having been taken with an attack in the middle of the street. At the time of her examination she presented a slight laryngeal catarrh and hypertrophic rhinitis. Treatment consisted in applications of the cautery to the anterior ends of lower and middle turbinates. Result, patient entirely cured.

Case VIII. 3. A woman, twenty-seven years old, subject to spasm of the glottis for the last six months, first one occurring on going in bathing in the ocean. Her attacks occurred more frequently at night, but occasionally during the day. Larynx normal and marked swelling of anterior ends of lower turbinate. Patient treated with irrigations of tepid water with borax and sodium bicarbonate. Result, patient cured.

Case IX. 4. Woman, thirty-eight years old, had been suffering from spasm of the glottis for one month, first attack occurring after severe cold. These attacks occurred both during day and night, and were preceded by short dry cough. Woman cried at the least provocation, and presented other hysterical manifestations. Menstruations have always been more or less painful, and physical examination showed marked tenderness in region of the right ovary, and signs of incipient tuberculosis in right lung. Examination of larynx and pharynx showed nothing abnormal. Examination of the nose showed septum deviated to the right, and left lower turbinate swollen and red. Introduction of speculum was extremely painful. Treatment consisted of irrigations of tepid water and borax. Result, patient cured.

Case X. 5. Man, fifty-one years old, had been suffering from attacks of spasm of the glottis for three weeks, time of attacks not given. Patient said that attacks were brought on by secretion dropping in throat. Examination of the larynx showed a slight hyperemia. Patient also presented evidence of nasopharyngeal catarrh. Examination of the nose showed septum deviated to the right, hypertrophy of the right lower turbinate, and a marked swelling of the left lower turbinate. Patient treated by irrigations of tepid water and borax used twice a day. Result, cured.

Case XI. Bosworth [22] reports two cases: 1. Man who had suffered for thirty-three years with spasm of the glottis. His first attack closely followed diphtheria. These attacks always occurred at night. Examination of the nose showed marked hypertrophic rhinitis and deviated septum. Treatment consisted in removal of the deviation and cauterization of the turbinates. Result, patient greatly relieved.

Case XII. 2. Woman, fifty years old, whose attacks always came during sleep, was found to have numerous nasal polypi, after the removal of which she never experienced another attack of glottic spasm. Bosworth also reports two cases of glottic spasm, the cause of which he gives as atrophic rhinitis. In both these cases the attacks occurred only at night. After treatment by nasal irrigation patients were entirely free from glottic spasm.

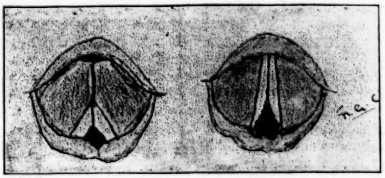
Case XIII. Hamilton Stillson [17] reports a case of a man, printer, thirty years old, who said he found himself every night in the middle of the floor gasping for breath; attempts at inhalation very noisy, very difficult and distressing. Could not state length of spasms, seemed several minutes. Stated that he could not catch his breath until unconciousness had almost supervened. These attacks never occurred in day time, but only at night and during sleep. Under good illumination Stillson elicited an exhibition of the spasm by touching the vocal cords with a probe. "Cords fell together like a valve, and efforts at inhalation seemed to suck them together." Short gurgling whoop was heard, which was repeated about once a second. Between the whoops there was a period of exhalation, short and easy. Profound cyanosis supervened, the ocular conjunctivar being markedly congested. Patient's distress was so marked that chloroform was administered, whereupon the inhalation became deeper

and less noisy. Attack lasted about thirty seconds. Pulse slightly irregular and slightly accelerated. Patient never used alcohol, tea or coffee, and presented no evidence of rheumatism, syphilis or tuberculosis. Examination of nose and throat revealed a large spur on left side of the septum and a deviation toward the left. There was a hypertrophy of the lower middle turbinates, right and left, polypoidal degeneration of the mucous membrane, hypertrophy of the lingual tonsil and hyperemia of the epiglottis and false cords. With cocaine anesthesia hypertrophy of the lower turbinate and spur were removed. Result, complete cure.

AUTHOR'S CASE. Mrs. K., forty-three years old, came to my office with the following history: She had always been a healthy woman up to the time when she came to this country, seven years ago. At that time she suffered severe pain with swelling in the region of the appendix. Physician consulted then advised operation. She did not, however, submit to the operation, and continued to suffer pain off and on until a year ago. She has had two children, and no miscarriages. She consulted me in regard to attacks of suffocation, which occurred four or five times a day. She said that these attacks appeared without any warning or cause, and were so severe that she and her family thought at times that she would surely die. The first of these attacks occurred two years ago, and during the following year she experienced on an average one or two attacks a month. During past year they gradually increased in frequency. A little over a month ago she suffered from a severe cold in her head, and since that time has had from two to five attacks a day. They came on at no especial time, occurring occasionally during the day, and other times at night, although previously her attacks always came on during sleep. She has never been a nervous woman, and except for the pain in her right side and this present trouble she has been very healthy.

Patient was very hoarse and it seemed quite an effort for her to speak. She said that in the morning her voice was clear, but that it gradually became hoarse and "clogged up" toward evening. Examination of larynx showed typical picture of acute catarrh. Pharynx and nasal pharynx were normal. Anterior rhinoscopy showed marked deviation of septum to right, small spur and marked hypertrophy of middle turbinate on the left. With the application of a 1% solution of silver nitrate to the larynx I was able to elicit a spasm of the glottis which her husband and son said was typical of one of her attacks. Patient's face drawn as if in great pain. During the inhalation her head was thrown back and a short, loud whoop was heard. On expiration, head bent slightly forward, and expiration accomplished with apparently no effort. There was an interval of one second between inspirations. The duration of the expiratory action was about twice the length of the inspiratory. An examination of the larynx now showed almost complete closure by apposition of the true vocal cords up to the posterior vocal processes, and also an apposition of the false cords for slightly more than half their length. During expiration there was a slight relaxation of the true cord and a rather marked deviation of the false cords. Patient was now becoming cyanotic. After dashing cold water in her face three or four times the spasm relaxed. The duration of this spasm was one minute and a half, which her husband said was about one fourth the usual length of an attack.

Operation advised, and patient requested to report in four days. She returned, however, on the second day, and begged me to operate, as during the previous twenty-four hours she had suffered six spasms. After applying a 1% solution of cocaine the anterior end of the middle turbinate was removed with a cold snare. Nose then firmly packed with sterile gauze and patient returned the following day and said that she had one slight attack the previous night. Gauze removed and patient had considerable bleeding, which was checked by application of tannic acid. I intended operating on the spur and septum, but as the patient was entirely cured by the operation on the turbinate, she would not consent to the second operation.



Glottis during inspiration. Glottis during expiration.

Spasm of the glottis, as it occurs in these cases, is a spasm affecting all the adductor muscles of the larynx with the exception of the arytenoideus. It is a partial spasm, in contradistinction to that occurring in laryngeal vertigo, which is a complete glottic [16] spasm.

Diagnosis. — In making a diagnosis of glottic spasm of nasal origin, the following conditions which may give rise to spasm of the glottis in adults must be excluded: Intra-laryngeal; foreign bodies, tubercular and syphilitic affections, irritating vapors, polypi, edema and infiltrations. Extra-laryngeal; tabes, epilepsy, hysteria, tetanus, hydrophobia, chorea and tetany.[15] Hypertrophied tonsil, aneurysm of the left common [10] carotid or of the aorta,[11] dilated [12] stomach,[13] cervical adenitis,[19] goiter,[9] or pressure on phrenic [7] nerves [8] may also give rise to spasm of the glottis.

Dysponia spastica. — Spasm of the glottis only on attempted phonation is called dysponia spastica. The glottis remains closed as long as patient attempts to use his voice, and opens when there is no further attempt at conversation.

Laryngeal vertigo. — Patient is seized with giddiness, blurring of vision, and unconsciousness, caused by a complete glottic spasm, remaining in that condition but a few seconds, during which there may be spasmodic twitchings of the limbs and face.

The cause and origin of reflex. — The sensory nerves of the nose are supplied by the trifacial. The anterior ethmoidal nerve, a branch of the nasal nerve, supplies the anterior portion of the interior of the nose, while the remaining portion of the nasal cavity is supplied by the posterior nasal and by a branch of the dental. The reflex travels toward the center along the trigeminus, toward the periphery in the vagus. This has been demonstrated experimentally on animals by Francis Franck.[18] The results obtained showed the cause of this reflex in 11 cases to be congestion or hypertrophied turbinates, in 2 cases polypi, in 2 cases atrophic rhinitis, and in 1 case chronic

nasal catarrh. That the exciting cause of the reflex is the periodic apposition of mucous membrane might be applicable in some of the cases, but is not in all. I believe the impulse arises in the termination of the sensory nerve, from a congestion or irritation of the surrounding tissue.

Hysteria. — That a nervous or hysterical disposition predisposes one to these attacks is not at all evident from an examination of these cases. In but 3 cases has any mention been made of this disposition on the part of the patient, while most authors have been particular to emphasize the fact that aside from glottic spasm their patients were in especially good health.

Sex. — Of the cases here collected, 57% were females and 43% males. This affection is much more equally divided as to sex than one would be led to infer from the perusal of the present textbooks.

Age. — In males the average age was forty-three years, in females, thirty-two.

Time of attacks. — In 7 of these cases the attacks occurred only at night, and in 2 others occurred most frequently at night, but in the remaining 7 cases the attacks came on at no especial time, which seems to contradict the statements made in regard to these attacks in our textbooks on the subject, which state that the attacks occur only at night. In my own case, during the first year in which she was subject to spasm of the glottis the patient experienced the seizures most often at night, but with the increased frequency of attacks they occurred as often during the day as during the night.

Sexual apparatus. — In 6 of the cases here collected we find direct connection with the sexual life or apparatus; menopause, 2; diseases of the sexual organs, 1; masturbation, 1; occurring directly after marriage, 2. Chaimberlain [14] reported 2 cases occurring in women at time of menopause, but in both cases neglected to examine the nose for nasal lesions. Przedbreski's [20] case of spasm of the abductors is of interest in that the attacks were most frequent at menstrual periods, and much more severe when patient went over the usual time.[21] Störk reports an interesting case in this connection. An impotent man married, and soon after both husband and wife suffered from spasm of the glottis. At this time the woman received treatment, but her condition failed to improve. She was seen later completely cured and the mother of three children, and as Stork explains: "*Sie hatte sich anderweitig Hilfegesucht und gefunden.*"

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Reports of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Twenty-first Annual Meeting.
Held at Washington, D. C., May 7 to 9, 1907.

Dr. Harvey G. Mudd, of St. Louis, Vice-President, in the chair.

Tuesday, May 7, First Day.

THE PESENT STATUS, TWO YEARS AFTER THE ORIGINAL REPORT, OF EIGHTEEN MALE CASES OF ROENTGEN RAY STERILITY.

This report, by Dr. F. Tilden Brown and Dr. A. T. Osgood, of New York, was read by Dr. Osgood. In their original report it was stated that repeated long exposures to the Roentgen rays produced sterility in the male. They were still of the same opinion. Some had escaped permanent injury, doubtless because of avoidance of exposure. Some who then had bad records were now the fathers of children. The condition was not permanent in all cases. Some in whom no spermatozoa could be found and who were thought to be permanently injured had improved considerably, but the majority were still in the same condition. All who had done extensiv ex-ray work for several years showed an absence of spermatozoa. The amount of injury was directly proportionate to the changes in the spermatogenetic cells. The condition could be produced in animals, but required considerable exposure. The spermatozoa themselves were found to be highly resistent to x-ray exposures. There was no relation between the effect on the skin and that on the deeper organs. In no case had there been any evidence of deterioration of sexual activity.

Dr. Edward L. Keyes, Jr., of New York, asked Dr. Osgood whether he considered the improvement in some cases due to precautions taken by those men who improved which were not taken by some who did not improve, or whether he had seen improvement occur in men who continued to use the x-ray without precautions. He thought it might be interesting in this connection to detail a report made by Dr. Lapowski, of New York. He had reported that he had a case of eczema of the anus which resisted the ordinary methods of treatment. He sent the patient to be x-rayed, with a knowledge of the danger of producing sterility by the x-rays, and especially specified that the patient's testicles should be protected by a lead screen. The patient's seminal fluid was examined twice before the treatment, and living spermatozoa were found in great numbers. The x-rays were applied three times. At the end of that time the patient returned, when his semen was again examined twice, and found to contain a few dead spermatozoa. He was then exposed to the rays three times more, and two more examinations of the seminal fluid showed no spermatozoa whatsoever. He was then taken off the x-ray treatment. Three months later his semen was twice examined and found to be full of motile spermatozoa. The restoration was apparently immediate and complete.

Dr. L. Bolton Bangs, of New York, said that since this subject was presented by Dr. Brown some physiological questions had presented themselves to his mind, and he would like to have those who made the obser-

vations, and Dr. Osgood in particular, throw some light upon the subject. He asked if during the disappearance of the spermatozoa there was also an associated loss of sexual desire and a loss of the power of sexual intercourse. It seemed to him that these questions had a rather important bearing, and that they should be answered with some definiteness. He understood Dr. Osgood to say that there was no permanent deterioration in sexual capacity, but that was indefinite.

DR. FRANCIS R. HAGNER, of Washington, D. C., said there was a case in Washington that had come under his observation, being that of a physician who had done considerable x-ray work. This physician had been married nearly two years and his wife had not become pregnant. Dr. Hagner had not examined him, but the physician had examined his own seminal fluid and found no spermatozoa. He then used a kind of lead apron in his x-ray work for a period of four months, at the end of which time his wife became pregnant.

DR. OSGOOD, in closing the discussion, said that in the cases observed there had been no evidence of sexual deterioration in any form. They still retained the sexual desire and the power of sexual intercourse. This was a very important question, and we ought to have as much information in regard to it as possible. He could see how it might be applied to the relief of certain conditions in married life. As to Dr. Keyes' question, he thought that every man observed had taken precautions since that time. They all improved with precautions. He related the case of a man who began x-ray work in 1905, and who did considerable x-ray work for six months without any precautions. In February, 1905, he knew there were no spermatozoa in the seminal fluid. In June, 1905, there were very few. Several examinations in September and October of the same year showed absolutely no spermatozoa. Examinations were then made once a month until April, 1906, and no spermatozoa were found at any time. Three months later examination showed a few spermatozoa. After the first six months the patient had used very careful precautions. After July, 1905, he was using very careful precautions, but not until after April, 1906, were any spermatozoa found, and then only a very few. In August, 1906, his wife became pregnant, and since that time a very few had been found on repeated examinations. In one case in which improvement had taken place three examinations were made by different men, and each found one spermatozoön. In answer to a question by Dr. Bangs, Dr. Osgood said the patients were all young men, and that no mental effect had been observed. He said he had talked with Dr. Lapowski in reference to the case mentioned by Dr. Keyes, and he thought there was some question as to the amount of protection employed.

DEFORMITIES OF THE PENIS DUE TO SYPHILIS, GONORRHEA AND OTHER CAUSES.

DR. ROBERT W. TAYLOR, of New York, read this paper. This was an important class of cases, concerning which there had been much want of knowledge. Syphilis played an important part in causing such conditions. Others seemed to be an occult symbiosis of syphilis and gonorrhea. Ulceration might occur either in the primary or tertiary stage of syphilis. Indurating edema was seen only in syphilis, most frequently as a complication of chancre. The condition commonly called elephantiasis of the penis was not uncommon in tropical countries, and was also seen in the negroes in the South. It was commonly believed to be due to filariæ, but it was really due to a slow streptococcic infection following gonorrhea or syphilis. No observer, either in America or in Europe, had ever found filariæ in any case of elephantiasis of the penis. Balanitis and phimosis, internal urethrotomy and total extirpation of the inguinal glands might be followed by deforming conditions of the penis.

DR. JOHN H. CUNNINGHAM, of Boston, said he was pleased to hear that Dr. Taylor had found no cases of elephantiasis of the penis to be of filarial origin. Recently in going through the literature while preparing a thesis for this Association he had been impressed by the fact that no case had been proved to be due to filariæ. Although lymph scrotum and elephantiasis of the lower extremities had generally been found to be caused by filariæ, none of the cases of elephantiasis of the penis had been attributed to that cause. It was known that the adult worm occluded the lymphatics, either by its own presence, or secondarily by producing an inflammation which constricts them and produces a dilatation distal to the point of constriction. These dilatations rupturing into the urinary tract would produce a condition of chyluria, etc. He asked if Dr. Taylor could tell whether or not an incision into a penis affected with elephantiasis would bring forth a chylous fluid. He had been unable to find anything on this point in the literature.

DR. TAYLOR said that it seemed to him that the filariæ had been praised for labors not their own. It was a case in which generalizations had been made from a few cases. It was found in southern climates that filariæ would cause abscesses, but the long-continued hyperplasia that was called elephantiasis was undoubtedly caused by the streptococcus. In southern climates a little ulcer would occur, and then this would become infected with the streptococcus. This streptococcus infection was sometimes hereditary, cases having been reported in which children were born with elephantiasis. Chylous fluid was found in one of Dr. Taylor's cases. His studies convinced him that this whole subject had been misunderstood.

PRESENTATION OF INSTRUMENTS.

DR. JAMES R. HAYDEN, of New York, presented (1) an all-metal bladder syringe, that had the advantage that it could be readily sterilized. The piston was of rubber. (2) A modification of Dr. Gouley's tunneled sound, with the tunnel on the concave surface of the instrument, the object of this being to prevent in operations the cutting of the filiform bougie, which might occur with the old instrument. (3) A small bladder aspirator, which could be boiled, and which had the advantage of being very portable, whereas the old trocar and canula was quite a considerable instrument.

DR. EDWARD L. KEYES, JR., of New York, had used the form of syringe presented by Dr. Hayden, and thought it was better than any large syringe he had ever used.

DR. JOHN VAN DER POEL said he was very much interested in Dr. Hayden's guide and tunneled sound. Two or three years ago he had shown a somewhat similar modification with a Benique or Guyon curve. Cases often came to the clinics suitable for the filiform, and in which only a filiform could be passed. The patient would not submit to operation, and the next time he presented himself the stricture would have retracted down to the same size as at first, and it would be necessary to go through the same process of filling the urethra with filiforms, then passing a tunneled sound and stretching the urethra up to 9 or 10 French. He had thought it wise to have made a number of tunneled sounds of different sizes to pass over the filiform, in order to perform rapid dilatation up to 14 or 15 French, after which it was generally possible to pass an ordinary bougie. These sounds ran up as high as 24 or 25 French, and in all of them he had the Benique curve. He had found in per-

forming external urethrotomy that that curve was more practical, as with a strong sound the perineal tissues to be cut through could be compressed until they were not more than half an inch thick, instead of having to cut through a large amount of more or less spongy tissue. In that way it was easier and quicker to cut into the urethra. His instruments did not have the advantage of having the filiform on the anterior surface.

Dr. Harvey G. Mudd, of St. Louis, asked Dr. Hayden if he had found, practically, that it did facilitate the passage of the tunneled sound to have the groove on the concave surface.

Dr. Hayden, in closing, said the only advantage of having the filiform on the concave surface was to avoid cutting it. Sometimes in using the old instrument he had cut the filiform, which, of course, was a rather disagreeable accident. The only claim for merit was that with the filiform out of danger the operation was greatly facilitated.

A successful case of anastomosis between the vas deferens and the globus major, for sterility following gonorrheal epididymitis.

Dr. Francis R. Hagner, of Washington, D. C., reported this case. The patient had had gonorrheal epididymitis on both sides, and before operation examination showed entire absence of spermatozoa. The operation devised by Martin, of Philadelphia, was done, by which an anastomosis was made between the vas and the globus major of the epididymis. An examination of the patient's seminal fluid a month after operation showed numerous spermatozoa, though no pregnancy has resulted. Dr. Hagner also mentioned a case he had seen with Dr. Martin, which Dr. Martin had operated on. This patient's wife had become pregnant since the operation, but had miscarried.

Dr. L. Bolton Bangs, of New York, had had no personal experience with the operation. He had considered it, and was hoping to have the opportunity of doing it, because it seemed to him to open up a wide field of conservatism and of hopefulness for those who were, at present at least, permanently sterile. He wished to know in what percentage of the cases operated on a permanent good result had been obtained.

Dr. Hagner said that Dr. Martin reported 5 cases last year. He thought they were all a success in that they had a return of spermatozoa. Whether there was a tendency to relapse, whether the spermatozoa again disappeared or not, he could not say, as the operation was still in its infancy. In his own case, the spermatozoa had increased at each examination. The last examination, a year after the operation, the semen was loaded with living spermatozoa.

The surgical treatment of sterility in the male.

Dr. Edward Martin, of Philadelphia, said his work during the past year in the operative treatment of sterility in the male had been a series of unbroken failures. He had had no successful case, and yet the reasons in each case were mechanical. All of the cases operated on had active, motile, healthy spermatozoa, but the obstruction was found to be elsewhere than in the epididymis. In one case there had been such a deep-seated inflammation in the epididymis that it was necessary to tap the testicle, and even then no spermatozoa were found, but subsequently they were found when the anastomosis was made He had found that the obstruction was not necessarily confined to the epididymis, but might affect the vas or the ejaculatory ducts. In order to determine whether there was obstruction between the epididymis and the posterior urethra, the vas was opened and some one of the soluble dyes injected into it. If the vas was patulous, the dye would appear in the next ejaculation. All the cases operated on during the past year failed to show any sign of the dye after this test, showing obstruction above the epididymis. The operation could be done perfectly under local anesthesia, without interfering with the patient's work. An important point in the technique was the handling of the veins very gently, in order to prevent phlebitis. After mumps there was apt to be so much atrophy that the operation was not available. He had demonstrated that where the conditions were favorable the operation was not only successful, but it apparently remained permanently so. There seemed to be no tendency to close up. Some of the cases had existed for several years, and active spermatozoa were still found. It was desirable before the operation to get rid of the chronic posterior urethritis which usually accompanied these old cases of epididymitis.

Dr. John van der Poel asked if Dr. Martin did not report last year one case where the wife had become pregnant after the operation.

Dr. Edward L. Keyes, Jr., of New York, asked Dr. Martin if he tapped the vas posteriorly.

Dr. Martin said he had reported a case last year in which the wife became pregnant after the operation. It was the case mentioned by Dr. Hagner. The proof seemed to be complete. The vas was reached by the shortest route, which was the posterior. The tunica vaginalis was cut through, and the whole of the epididymis exposed. With a pair of forceps, of the kind used by eye specialists, a portion of the epididymis was picked up and snipped out with a pair of eye scissors. If spermatozoa were present, a characteristic drop would appear in the wound. This was examined microscopically and reported on. If spermatozoa were not found, one should go a little higher up and a little deeper in. The openings were closed by a very fine stitch. A most surprising feature was that a man who had never had a vas had motile and healthy spermatozoa. Closure of the duct was not followed by atrophy in this particular case. Also, the fact was corroborated that spermatozoa were motile before they were mixed with the prostatic fluid. The spermatozoa did not need for their full development the passage through the epididymis, nor admixture with the prostatic fluid.

Spontaneous fracture of calculi.

Dr. Arthur T. Cabot, of Boston, said the subject of spontaneous fracture of stones had always interested him, and two years ago, when he was in England, he looked over the beautiful collection of calculi at the Norwich Hospital, and was perfectly astonished to find about a dozen first-rate instances of spontaneous fracture in that comparatively small collection of stones. Spontaneous fracture was a characteristic of uric acid stones, or of a combination of uric acid with other substances. In stones of other constituents spontaneous breaking up took place only from without inwards, through solvent action, and the fragments did not show any of the characteristics of true spontaneous fracture. Oxalates often broke spontaneously, but never showed regularity in their fragments. Spontaneous fracture of uric acid stones was due to the arrangement of the crystals in the building up of the stones, and even the smallest stone showed a characteristic segmentation. The nucleus of a uric acid stone was always separated from the body of the stone by a layer of urate of ammonia. From this layer furrows and ridges extend toward the periphery. The presence of these furrows and ridges was the real arrangement which made for spontaneous fracture. The rifts and ridges might also start from layers more distant

from the nucleus. It was only in exceptional cases that the nucleus fell away together with the other layers. Spontaneous fracture took place most successfully in the bladder since it was brought about in stones in the renal pelves only very rarely. Chemical action might be explained as a factor through the solution of the substances in the furrows or rifts, to allow of which it must be supposed that all or some of the rifts reached to the surface of the stone and were exposed to the action of the urine in the bladder. Spontaneous fracture was rather apt to take place in a urine which, having been concentrated, had become very dilute. It seemed as if this extremely dilute urine, filtering into the stone along these rifts or radiating striæ, dissolving the more soluble parts of the stone, freed the less soluble parts, and they became separated in the form seen in the photographs. Dr. Cabot said it was a revelation to him that spontaneous fracture was so frequent as he found it to be at Norwich. It was certainly very rare in this country. The stones found in this country were mostly secondary phosphatic stones, due to alkaline fermentation of the urine. Unfortunately, the present habit of crushing stones might destroy a good many good specimens of spontaneous fracture.

DR. RAMON GUITERAS, of New York, had had one case of spontaneous fracture of vesical calculi, which he had presented at the Academy of Medicine in New York. In this case there had evidently been three or four stones in the bladder. The bladder walls were found to be very much thickened, and the breaking up of the stones had probably been caused by the pressure of the bladder walls upon them. The diagnosis had been made of stones in the urethra. On operation through the perineum it was found that there were three calculi in the posterior urethra. When the bladder was opened it was found to be literally full of stone fragments, and 100 to 150 pieces were removed through the perineal wound.

DR. JAMES BELL, of Montreal, mentioned a case that had interested him very much a number of years ago of spontaneous fracture of stones in both kidneys. A stout, beer-drinking Englishman, about thirty-five years of age, came into his hospital service in a very bad condition. He had chills, high fever, scanty, purulent urine, and marked tenderness over the kidney regions. A diagnosis of renal calculi was not thought of, the condition being attributed to an infection of some sort. The patient's condition would not permit of an operation, and he died in about forty-eight hours after entering the hospital. Autopsy showed the pelves of both kidneys full of stone fragments. As the stones were not analyzed, he could not say what their composition was. The finding of the fragments was a great surprise, as at that time he had not heard of such a condition.

DR. L. BOLTON BANGS, of New York, said that when the advertisement of Buffalo Lithia Water first appeared, declaring that spontaneous fracture of stones in the bladder was possible, he, of course, ridiculed it, but subsequently at an operation where he did a suprapubic cystotomy for the removal of stone the appearances were such that he began to suspect that such a thing was possible. The majority of stones seen in practice in this country were those which might be termed secondary stones. But the appearances of the stones mentioned were such that it seemed to him the question of spontaneous fracture of stone in the bladder had not been given enough attention, and that such a thing was possible. It was a revelation to him to learn that there could be so many of such cases.

DR. HUGH H. YOUNG, of Baltimore, said this was an interesting topic, and one that had been very much neglected in the past. His attention was called to the subject several years ago, owing to a case he had then. An old gentleman suffering from enlarged prostate came to him, after spending six weeks at the Saratoga Springs. He came for operation, and a cystoscopic examination was made preparatory to operation. He was startled to find stones broken up in his bladder. This made a most beautiful cystoscopic picture. The fragments were removed by an evacuator, as after lithalopaxy, and 19 fragments were found that were beautiful specimens of fractured calculi. They agreed with Dr. Cabot's description, in that the nucleus removed did not participate in the fracture. In looking over the literature he was struck by an extensive series of articles in which the author had come to the conclusion that the fracture of the stones was due to a change in the composition or character of the urine, as Dr. Cabot had explained. Dr. Young's case bore out that contention. The patient went to Saratoga and lived six weeks, and evidently the fracture was produced by drinking that water. Enough attention was not paid to the hydrotherapeutic treatment of cases of calculus, either before or after operation.

DR. EDWARD L. KEYES, JR., of New York, asked Dr. Cabot as to the practical bearing of this subject. It was suggested to him by Dr. Bangs's remarks concerning the Buffalo Lithia Water. He said they had a collection at their office of over 200 stones, and yet they had no record or evidence of any spontaneous fracture in the bladder. This would bear out Dr. Cabot's statements as to its rarity in this country. He had his eye kept open for a record of a case in which the fragments of a stone spontaneously fractured had been passed spontaneously, but he had not been able to see that it made any difference in the treatment whether the stones were fractured or not, they were not passed, and the condition of the patient remained the same. Therefore, water as a means of producing spontaneous fracture of stones was totally valueless.

DR. CABOT, in closing, said he did not think these observations as to spontaneous fracture could be taken as proving the value of Buffalo Lithia Water, because the stones could be removed so easily and thoroughly by mechanical means. It would be very rare indeed for a stone of any size to break up into fragments small enough to pass through the urethra. He did think that waters were very valuable after operations, for stone and to dissolve beginning stones. He has had cases which convinced him that stones in the kidney were dissolved.

(To be continued.)

Book Reviews.

Principles and Practice of Dermatology. By W. A. PUSEY, A.M., M.D. New York and London: D. Appleton & Co. 1907.

We have read this new dermatological textbook of a thousand pages with special interest and find in it very much to commend. As the writer states, more space than usual has been given to the principles of dermatology; also general treatment has been very fully dealt with. Much space is given to some of the affections with which the writer has had special experience; for instance, blastomycosis. The chapter on this affection is admirably written and is accompanied by a number of excellent illustrations. The re-

markable frequency of this affection in Chicago has afforded the author an opportunity to discuss the disease more intelligently than could de done by a writer from another city. Most of the illustrations are of great excellence. Rather less space than usual is given in this book to the microscopic anatomy of cutaneous affections. The author's well-known experience with x-ray therapeutics makes his comments on this method of treatment and its practical application of great interest.

Medical Diagnosis. A manual of clinical methods for practitioners and students. By J. J. Graham Brown, Assistant Physician, Royal Infirmary of Edinburgh, and W. T. Ritchie, Clinical Assistant Pathologist, Royal Infirmary of Edinburgh. New York: Imperial Publishing Co. 1907.

This manual of clinical methods has reached its fifth edition, an evidence in itself of a demand for the book. It is comprehensive in that a survey of both the theory and practice of the methods of physical diagnosis as well as clinical laboratory procedures is attempted in a book of very moderate size. This fact of course entails a scantiness of detail in many parts, but on the whole the choice of subject matter has been good and the result is a compact book containing much information, especially useful for the student beginning his study of clinical methods.

The book is well printed and mistakes are very few. The use of " stones " as a measure of weight is to be criticized in an American published book. Again the authors' condemnation of the binaural stethoscope and advice to use a simple wooden stethoscope is out of harmony with American usage. The use of the word " cirrhotic " in reference to the kidney is etymologically incorrect as is also " mammary " instead of " mamillary" line. Under the consideration of abdominal palpation the method of palpating with the patient in a warm bath should be included as a very helpful procedure in some cases in which general anesthesia might otherwise be required. On page 98 the impression is given that the standard in the Haldane hemoglobinometer is a 1% solution of hemoglobin instead of a solution of carbon monoxide hemoglobin. On pages 116 and 117 the authors' distinction between the lymphocytes included under pathological leucocytes and normal lymphocytes is not clear and a somewhat more extended account of the general histogenesis of blood cells would perhaps give a better idea of blood conditions than is obtained from the authors' account.

However, these criticisms are not intended as a condemnation of the book. In the main they apply to points of minor importance and the book is to be commended within the limitations set by its scope and size. The consideration given to graphic methods of studying venous and arterial pulses is in keeping with the present active interest in this method of study. The inclusion of a description of opsonins indicates that revision has kept the book up to date.

Diseases of Women. A clinical guide to their diagnosis and treatment. By George Ernest Herman, M.B. Lond., F.R.C.P. Consulting Obstetric Physician to the London Hospital; Consulting Physician-Accoucheur to the Tower Hamlets Dispensary; Late President of the Obstetrical Society of London and of the Hunterian Society, etc. With 265 illustrations. New York: William Wood and Company. 1907.

This is a book of 900 pages and of convenient size to handle. It is legibly printed on good quality paper, except that the plates of the illustrations are worn and therefore the figures are not as distinct as in the earlier editions. Gynecology is approached from the standpoint of symptomatology as the following chief headings from the table of contents show: General; Chronic Pelvic Pain; Pelvic Inflammation; Internal Hemorrhage; Hemorrhage; Leucorrhea; Disorders of the Vulva; Disorders of Menstruation; Disorders of the Sexual Functions; Disorders of Parts Adjacent to the Sexual Organs; Abdominal Tumours.

The book is not a compilation of the work of others, nor yet a system. It represents for the most part the views of a practitioner of mature experience and somewhat from the obstetrician's standpoint. It is intended for the general practitioner and not for the specialist. As to the relations of the family doctor to minor gynecology the author says (p. 5): " The minor gynecological ailments, real or supposed, are common, and the majority of them came first to the family doctor. We can by sound advice prevent the patient from magnifying trifles; can disabuse her of erroneous theories before they have become fixed in her mind; can dispel her fears for the future; can correct an unhealthy mode of life before it has had time to do harm. He can render these great services to his patients more easily than a specialist, because he knows more about his patients, is called in earlier, and sees them oftener." Also: " Major gynecology must always be reserved for the specialist."

Supplemented with a good American text-book for the technique of minor gynecology this is a valuable volume for the physician's library.

A Handbook of Skin Diseases and Their Treatment. By Arthur Whitefield, M.D. (London), F.R.C.P. New York: Longmans, Green & Co. London: Edward Arnold. 1907.

The writer asserts in his preface that although there are many large treatises on dermatology, he believes there is still place for a concise book for students and general practitioners, and this has been the object of this work. Treatment is especially dealt with, and on this subject the writer is particularly clear and practical. The new methods of Sir A. E. Wright are dealt with, probably for the first time in an English text-book. The photographs and micro-photographs in this book are of special excellence.

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FEES FOR LIFE INSURANCE EXAMINATION.

WE have on various occasions alluded to the policy of the large insurance companies in reducing the fees for medical examination. Throughout the investigations which have recently brought the companies prominently to public notice it has been evident that the medical profession in its intimate relations with insurance corporations was likely to be a co-sufferer. This proved, at least temporarily, to be the case in the attempt to reduce the fees for medical examinations. The protest against such a reduction has been widespread and emphatic with results which are just now manifesting themselves.

It will be a gratification to the medical profession to learn that very recently two of the three large New York Life Insurance Companies, the Mutual Life and the Equitable, have notified their medical examiners that after Aug. 1, 1907, these companies will pay a fee of five dollars for each examination for new insurance, irrespective of the amount of insurance applied for. The five-dollar fee had been paid by these companies from their origin, since 1843 in the case of the Mutual Life, and it seemed unjust to cut down the schedule at a time when wages and salaries throughout the industrial world had been steadily rising and living expenses at the same time increasing.

For the first time in history a powerful corporation was met by an organized resistance of the medical profession throughout the country, led by the American Medical Association. A very large number of the County Medical Societies, especially in the South and West, passed resolutions denouncing the fees as inadequate, and their members agreed to make no examinations for less than five dollars. As a result, the companies lost a large number of their best examiners and in certain sections their business was brought to a complete standstill.

In this unhappy controversy the companies feel that their attitude has been greatly misunderstood, claiming that they adopted the new fee schedule reluctantly, feeling that it was necessitated by the strong demand for economy which applied especially to cost in obtaining new business, the New York legislature establishing a sharp limitation and making it a criminal offense to exceed this. All the items which entered into this first year's expense were materially reduced, among them being the medical examiner's fee. The law did not wholly go into effect until Jan. 1, 1907. At the end of six months' trial, the companies announced that their economies had been greater than necessary and there was in consequence a small unexpended surplus. Appreciating the medical examiner's work and his value to the company, as soon as it was demonstrated that this surplus existed, the companies gladly restored the old fee to the examiners.

Recognizing the delicate situation in which the medical directors have been placed, we do not desire to criticize their explanation. At the same time, the medical profession may justly feel satisfaction at the successful outcome of a contest which has upheld its dignity and developed a significant *esprit de corps*.

In view of all the facts, it is certainly unfortunate that any representative insurance company should maintain the reduced fees for medical examinations. It is impossible to urge that the recognized fee of five dollars is unfair or exorbitant for the service rendered, which naturally consists not only in the examination of a candidate for insurance but also in the rendering of an expert opinion as to his physical condition. It is perfectly apparent that, if life insurance is to be restored to the place of dignity which it has of late been in danger of losing, the medical examination must be regarded as significant and the medical examiners must be treated with the consideration which the character of their work demands. It should therefore certainly be a matter of gratification that the large insurance companies, with one striking exception, are reverting to a scale of fees which has been justified by long experience and which medical men serving in the capacity of examiners have a most legitimate right to demand shall be maintained.

THE PROGNOSIS AND THERAPEUTIC MEASURES IN CHEYNE-STOKES'S RESPIRATION OCCURRING IN THE NEPHRITIDES.

The prognostic value of Cheyne-Stokes's respiration in the various nephritides is very variable, according to different writers. For some, this phenomenon not only indicates a fatal issue, but even an imminence of the end. Such is, particularly, the opinion or Traube, Merkel, Ziemssen and Biot. Saloz is more inclined to believe that the prognosis depends both on the nature and the intensity of the causal lesion and on the condition of resistance of the indivdual, while Hallopeau, Petit, Rendu and Merklen incline to this view. Out of fifteen cases recorded by Maillard in his thesis, eight presented a periodical dyspnea preceding death within a few days, while in other cases Cheyne-Stokes's respiration was present for a few days, then regressed and was followed by a period of calm for a certain length of time. It should be pointed out, however, that intermittent dyspnea finally reappears at more or less prolonged intervals, only to end in the final period preceding death.

This variance in the evolution of Cheyne-Stokes's respiration in nephritis is due to the productive lesions and the prognosis should consequently be made from a knowledge of these causes. There may be lesions of cardio-arterial insufficiency, or, on the other hand, the cardiac muscle may not be involved, in which case Cheyne-Stokes's is merely an epiphenomenon, destined to disappear with the asystolia, which gave rise to it. On the other hand, when the cardiac muscle is affected in its anatomical integrity, the prognosis is serious, because the heart can no longer overcome the valvular insufficiency, and consequently ischemia is inevitable and becomes more and more marked.

In instances where the predominating lesions are due to an arterio-sclerosis, the prognosis is serious, but not fatal, depending in a large measure on the condition of the heart. Blood irrigation is defective and has become permanent on account of the pathological cause, but the heart may partially overcome this functional insufficiency for a variable length of time, by an increase in its activity. However, the time comes when the cerebral ischemia increases on account of the cardiac insufficiency, serious symptoms appear, including Cheyne-Stokes's respiration, and death soon occurs. And lastly, in those cases where cardiac and vascular lesions co-exist, the prognosis is bad, and here Cheyne-Stokes's phenomenon indicates approaching death.

Generally speaking, the condition of the heart should guide the prognosis and, if this muscle has preserved its anatomical integrity, nothing need be feared for the time being; but if, on the contrary, there is arythmia, the outcome is serious.

The knowledge of the causes of Cheyne-Stokes's respiration should guide us in the treatment. Rendu and Merklen have used digitalis with the hope of diminishing the cerebral ischemia by increasing the functional activity of the heart, but their results have been variable. Sometimes Cheyne-Stokes's respiration disappeared, while, on the contrary, in other instances, its intensity increased, and this is probably due, as Merklen has pointed out, to the vaso-constricting action of the digitalis. The administration of this drug should find its principal indication in those cases of Cheyne-Stokes's respiration due to functional cardiac disturbances of an asystolic nature, in which the muscle is worn out, but not degenerated and so has need of the tonic effect of digitalis. But every time that the cardiac muscle has become so changed as not to react to this drug, it is absolutely contra-indicated, and one should endeavor to facilitate to the utmost the work of the heart. This may be obtained by milk diet, various diuretics and caffein, and the diuresis produced and kept up by these measures diminishes the overcharge of the circulatory system and the heart's work.

When Cheyne-Stokes's respiration is due to generalized arterio-sclerotic lesions, and if the cardiac muscle is not pathologically changed, it is quite permissible to counteract the arterial insufficiency by the administration of digitalis, which will increase the contractile energy of the heart. The ischemia resulting from the vaso-constriction need not here be feared, since the walls of the arteries, pathologically changed in their intimate structure, will react in a lesser degree. One may also employ the ordinary treatment of arterio-sclerosis, such as the iodides and a milk diet, and this would seem a useful therapeutic indication, especially in those cases where it is no longer possible to act on the heart.

And lastly, if there is a coincidence of cardiac and advanced arterio-sclerotic lesions, the causal treatment is no longer possible, and here the use of morphine becomes the one of choice in the treatment of the Cheyne-Stokes's phenomenon. When properly used this drug may occasionally regulate the respiration and give the patient sufficient rest. This remarkable action of morphine has been known for a long time and Weber, Saloz, Frentzel, Rendu and Pic have all noted the happy

influence of this drug, which, by the vaso-dilatation it produces, favors the afflux of blood to the cerebral vessels, so that it may be said that, in those cases where digitalis or the treatment of arterio-sclerosis have failed, hypodermic injections of morphine will be a valuable adjuvant in the treatment of Cheyne-Stokes's respiration in nephritis.

INSTITUTES FOR MEDICAL RESEARCH.

THE sixth volume of studies from the Rockefeller Institute for Medical Research has an added interest from the fact that it contains a description of the new buildings of the institute, together with the addresses delivered at the opening of the laboratories in New York, May 11, 1906. At present the Rockefeller Institute embraces three independent buildings, the chief of which is the laboratory building. Owing to its situation on a high bluff fifty feet above tide water, overlooking on one side the East River, this building has unobstructed light in all directions, and owing to its somewhat isolated position is also remarkably free from the disturbing noises of a great city. The laboratory building measures one hundred and thirty-six by sixty feet, and is five full stories in height. It is hardly necessary to say that the internal arrangements are constructed to meet the most modern requirements of laboratory research, particularly in its experimental aspects.

Now that this great institute, to be devoted solely to medical research, has become a reality, the natural question arises, and will surely arise often in the future, whether the establishment and development of institutes of research separate from established educational institutions is the best way to promote progress. The Rockefeller Institute has already justified its existence through a large amount of admirable, original work, which has proceeded from its students, and it is not to be questioned that the means will be forthcoming to extend this work in the future as occasion may demand. In general, however, the establishment of such independent institutes, except under the most favorable conditions, seems unwise and for the following reasons: In the first place, the cost of maintenance is very much greater for such an independent work than if associated with a pre-existing foundation. In the second place, the organization of the work is complex, and the difficulty of obtaining workers of experience and education considerable. In the third place, it is increasingly important that the various branches of medical science should be brought into closer relationship, as knowledge in each grows deeper. For these reasons, it is, on the whole, desirable that there should at least be a limit to the number of separate institutes, of which the Rockefeller Institute for Medical Research is one of the most notable examples. It is to be hoped that in the future great public benefactors will give toward the development and maintenance of existing institutions in close affiliation with university foundations, rather than establish more independent centers of research, which, however equipped and manned, must be handicapped by certain limitations which would not be the case under a general university administration.

MEDICAL NOTES.

CENTENARIANS. — The death of Mrs. Harriet B. Farrie, of Somerville, Mass., is announced at the age of one hundred years. Mrs. Sarah T. Robinson, of Lynn, Mass., has recently died at the reputed age of one hundred years.

RAILROAD CASUALTIES. — According to a recent accident bulletin, the three months ending March 31 have had an appalling number of accidents, although somewhat less than during the previous three months. The total number of accidents to passengers and employees was 20,563. Of these 421 persons were killed. There were 3,991 collisions and derailments, of which upwards of 500 affected passenger trains. The money loss amounted to more than three million and a half dollars.

DEATH OF DR. WILLIAM T. HOWARD. — Dr. William T. Howard has recently died at the age of eighty-six. Dr. Howard filled the first chair in gynecology established in this country at the University of Maryland, where he was a professor for thirty years. He was one of the founders of the American Gynecological Association and its president in 1884 and 1885.

A PRACTITIONER FOR SEVENTY YEARS. — Dr. William Bayard, of St. John, N. B., completed seventy years of professional activity on August 1. Congratulatory messages were received by him from the University of Edinburgh, where he received his medical degree, and from various medical societies with which he has been associated. A personal letter was received from the president of the Dominion Medical Association, a position which Dr. Bayard himself had formerly occupied.

Typhoid Fever in the Philippines. — Typhoid fever, according to the *Report of the Bureau of Health for the Philippine Islands*, seems to be obtaining a firmer foothold in the Philippines than has heretofore been the case. As the changes which ordinarily accompany an introduction of modern improvements are more and more introduced in these islands, it is becoming more apparent that this disease is constantly affecting more persons. At the present time the construction of the new railroads in the Islands is responsible for the gradual introduction of typhoid in many places at which it has not been encountered heretofore. Fortunately, so far the disease has apparently been due to direct importation, cases having occurred among Americans and Japanese who have only recently come to the country, and either arrive in the incubation period or have ingested infected foods obtained in the countries from which these new arrivals come. Filipinos seem to be the victims only in so far as they come in contact directly or indirectly with the former nationalities. Almost fifty cases have come to the knowledge of this Bureau during the quarter. It seems probable that the reasons why typhoid has not spread more heretofore in the Philippines are not so much because of the tropical climate, but because the ordinary vehicles by which the disease spreads have not been present.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 7, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 24, scarlatina 21, typhoid fever 16, measles 38, tuberculosis 68, smallpox 0, leprosy 0.

The death-rate of the reported deaths for the week ending August 7, 1907, was 20.19.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 3, 1907, was 224, against 238 the corresponding week of last year, showing a decrease of 14 deaths and making the death-rate for the week 19.16. Of this number 130 were males and 94 were females; 220 were white and 4 colored; 153 were born in the United States, 62 in foreign countries and 9 unknown; 39 were of American parentage, 170 of foreign parentage and 15 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 38 cases and 3 deaths; scarlatina, 21 cases and 0 deaths; typhoid fever, 17 cases and 2 deaths; measles, 37 cases and 1 death; tuberculosis, 66 cases and 25 deaths; smallpox, 0 case and 0 death. The deaths from pneumonia were 13, whooping cough 5, heart disease 22, bronchitis 0 and marasmus 4. There were 22 deaths from violent causes. The number of children who died under one year was 53; the number under five years, 15. The number of persons who died over sixty years of age was 35. The deaths in public institutions were 78.

There were 2 cases and 4 deaths reported from cerebrospinal meningitis during the week.

Tetanus a Reportable Disease. — The Massachusetts State Board of Health has recently added tetanus and chicken-pox to the list of reportable diseases. It is hoped by placing tetanus in this list that more complete observations may be made upon the disease than have hitherto been possible.

Davis Memorial Fund. — Contributions in this state to the Davis Memorial Fund have been received by Henry O. Marcy, chairman of the committee, in the sum of $618. This amount has been remitted to Dr. Frank Billings, of Chicago, treasurer of the committee. It is hoped that more contributions will be forthcoming.

Boston Insane Hospital. — The admissions to the Boston Insane Hospital, according to the tenth report of that institution, for the year ending Sept. 30, 1906, were 316, 125 men and 191 women, which is 100 less than the preceding year. In spite of this fact, the daily average of the year was 701, as compared with 671 the preceding year. A study of the statistics shows that 30% of the admissions to this hospital were sixty years old or over, a percentage exceeded in Massachusetts only by the wards for insane patients at the State Hospital at Tewksbury. A plea is made in the report that more land be purchased and that additional buildings for men be constructed. The further recommendation is made that a small emergency hospital be established for cases of mental disease, bearing the same relation to the Boston Insane Hospital that the Relief Station bears to the City Hospital.

NEW YORK.

Typhoid Fever at New Jersey State Asylum. — On July 29 the Board of Managers of the State Asylum for the Insane at Trenton, N. J., appointed as medical director of the institution, Dr. Peter P. Rafferty, of Red Bank, chairman of the medical committee of the board, in the place of

Dr. John W. Ward, removed. During the past spring at least twelve cases of typhoid fever occurred in the asylum, and an investigation has shown the premises to be in a very bad sanitary condition.

AN EPIDEMIC OF SORE THROAT AT SAG HARBOR. — The town of Sag Harbor, Long Island, is suffering from a severe, though apparently not dangerous, epidemic of sore throat, the exact nature of which is not stated, and nearly the entire population is affected by it. The season has been a very dry one, and the trouble is attributed by the physicians of the place to the clouds of dust, caused by numerous automobiles. The whole of Long Island is much frequented by these vehicles, and while the practice of sprinkling the roads with crude petroleum to lay the dust is in general use in many parts of the island, it does not seem to have been adopted as yet in its eastern portion.

A CENTENARIAN.— Mrs. Catharine Gilligan, believed to have been the oldest woman in the Borough of the Bronx, New York, died on July 30, at the apparently authenticated age of 107 years. She was born in County Sligo, Ireland, on St. Patrick's Day, March 17, 1800, and came to this country about twenty-five years ago. Her death was due simply to old age, and she is said to have prided herself on never having taken a drop of medicine in her life. She had eight children, twenty-four grandchildren, five great-grandchildren, and two great-great-grandchildren.

ST. BARNABAS' HOSPITAL. The annual report of St. Barnabas' Hospital at Newark, N. J., recently published, shows that 1,028 patients were cared for during the last year in the wards and private rooms, and about 4,000 treated in the out-patient clinics. The endowment fund of the hospital has now been increased to $100,000.

WARFARE AGAINST MOSQUITOES. — On July 31 the Board of Health held its regular weekly meeting on board the *Governor Flower*, the official cutter of Dr. Doty, Health Officer of the Port, while the vessel was steaming through the East River on its way to various points in the Borough of Queens, where there are salt marshes and many mosquitoes. On the way Dr. Doty gave some account of the warfare against the mosquitoes of Staten Island, which he has been waging for the past three years, and of the gratifying success which has attended his efforts at extermination, and the board determined upon certain measures to be adopted against the Long Island pests. Appropriations of considerable amount have been promised by the municipal authorities, with which to carry on the campaign, and it is proposed to enforce a law passed a year or two ago, which compels known private owners of salt marshes to ditch their own property.

RETIREMENT OF A POLICE SURGEON. — Dr. Stephen G. Cook, who was for many years a police surgeon, and for a considerable period president of the board of surgeons, was retired from the force on July 27, and will receive a life pension of $1,750.

RULE REGARDING FEES AT BELLEVUE HOSPITAL. — The Board of Trustees of the Bellevue and Allied Hospitals have just established a new rule which requires that any patient admitted to any of these public hospitals, who is possessed of funds of more than $50, shall have deducted from such funds, on discharge, $1.50 for each day's treatment. It is expressly provided, however, that this deduction shall not diminish the amount returned to a patient to a sum less than $50. Some objections having been expressed to this regulation, on the ground that it was unjust to enforce such a rule in institutions supported by the city, Dr. Armstrong, medical superintendent of Bellevue, has made a statement in which he says that the Board of Trustees found that a number of patients who could well afford to pay for treatment in some of the other hospitals were being treated in Bellevue, and its allied institutions, at no cost to themselves. In view of this fact and in order to prevent the needy poor from being crowded out of the beds — and from the further fact that the charter of Bellevue requires it — they adopted the rule mentioned. There is a law in the city which punishes by fine any person who can afford to buy medicines, should he go to one of the free dispensaries and get medicine for nothing, and be detected in the act. There is no more reason why the dispensaries should be so protected than that the hospitals should, especially as both kinds of institutions were established for the needy, and not for those who can afford to pay for treatment.

CONVICTION OF A CHRISTIAN SCIENTIST. — In the Court of Special Sessions on August 2, Clarence W. Byrne, the Christian Scientist, who some time ago was convicted on the charge of failing to provide medical attendance for his daughter, a child of six years, who died on May 1 from bron-

cho-pneumonia, was sentenced to thirty days' imprisonment in the penitentiary. The conviction was secured under Section 288 of the Penal Code, which makes it a misdemeanor for a person to "wilfully omit, without lawful excuse, to perform a duty by law imposed upon him, to furnish food, clothing, shelter or medical attendance to a minor." The imposition of the sentence had been postponed in order that certain objections might be filed by counsel for the defense, but, after due consideration, these were over-ruled by the court. At the time sentence was pronounced an opinion was given by Justice McKean, Justices Mayo and Deuel concurring, to the following effect: "The sole question is whether the omission to furnish medical attendance under the circumstances constitutes a 'lawful excuse.' To answer that question by granting the motion in arrest of judgment would establish a precedent that might be extremely vexatious in other directions. An individual of some other cult, with equal plausibility and earnestness could plead disbelief in educational methods as an excuse for not sending children to school; could withhold food, clothing and shelter, leaving each, as part of his religion, to be furnished through the same or similar agency. Certainly the health and morals of children, sought to be conserved as a public benefit, come as naturally within the plea here as do the facts set up by the defendant by the way of justification. The difference between health and education is that one is physical and the other mental, but surely none will seriously contend that this differentiation measures or limits the potency of prayer."

Current Literature.

Medical Record.
July 13, 1907.

1. Liszynsky, W. M. *Intracranial Tumor and Its Treatment.*
2. Livingston, A. T. *The Importance, in Surgical Cases, of Correcting Defective Unstriped Fiber, and Suggestion of Methods.*
3. Chappell, W. F. *Large Tumor of the Laryngopharynx, Removed by Subhyoid Pharyngotomy.*
4. Moffatt, H. *A Case of Typhoid Perforation of the Appendix; Operation and Recovery.*
5. Stow, B. *Paraplegia Caused by an Aneurysm of the Arch of the Aorta.*
6. Kaan, G. W. *Vaginal Implantation of Adenocarcinoma of the Uterus. Blood Metastasis in Recurrent Carcinoma.*
7. *Bishop, L. F. *Heart Disease and Blood Pressure. Physiological Re-education in the Cure of Cardiovascular Disease Resulting from High Tension.*

7. Bishop regards physiological re-education as of great value in the cure of functional cardiovascular disease. There must be persistent measures undertaken, covering weeks, months or even a year; but excellent results may be obtained even where compensation is destroyed. The first thing to accomplish is relief from worry and mental concentration for the patient. Next comes reduction of diet, including taking away of the sweets and red meats. Exercise should be carried on systematically, whether the patient wants it or not, except in those cases in which failing compensation necessitates a short time in bed.

New York Medical Journal.
July 13, 1907.

1. *Eliot, E. *Subcutaneous Rupture of the Spleen.*
2. *Conner, L. A. *On Certain Acoustic Limitations of the Stethoscope and Their Clinical Importance.*
3. Beardsley, J. G. *Pneumothorax.*
4. *Ripperger, A. A. *The Craving for Sweets in Diabetic Patients.*
5. Sawyer, J. P. *Incomplete Forms of Exophthalmic Goitre in Relation to Gastro-intestinal Disease.*
6. Taussig, A. E. *Gastric Cancer Producing a Gastro-cutaneous Fistula.*
7. Hill, E. C. *Diagnosis by the Nose.*
8. McKenna, J. A. *The Comparative Innocuousness of Foreign Bodies in Three Instances.*

1. Eliot describes the occurrence of subcutaneous rupture of the normal spleen (apart from injury to infectious or other enlarged spleens), resulting usually from direct violence, but sometimes also by contrecoup, or from falls on the feet from a considerable height. The rupture may be a simple laceration, or the organ may be reduced by contusion to a pulpy mass. The symptoms depend mainly upon the amount and rapidity of hemorrhage. Respiration is usually thoracic and there is nearly always tenderness and marked rigidity over the upper part of the left rectus and costal arch. The area of dullness extends down into the flank in proportion to the amount of hemorrhage. Resistance to depression by pressure of the eleventh and twelfth ribs, which are rarely fractured, will be present if rupture of the spleen has taken place. The most satisfactory treatment is splenectomy, the technic of which is described. Numerous cases prove that the spleen is not necessary in the bodily economy. Certain cases, it is true, have been slow in recovery and have suffered from anemia and emaciation, but these effects have been rare.

2. Conner mentions a number of auscultatory findings more distinctly obtainable by the naked ear than by the stethoscope. In 8 cases of aortic regurgitation diastolic murmurs almost or quite inaudible with the stethoscope were plainly heard with the ear alone. More important than these he regards cases in which bronchial breathing can be detected only by the naked ear, as examples of which he mentions instances where the diagnosis of pneumonia could be made a day earlier than by the stethoscope. In general, faint, high-pitched sounds are much more plainly heard by the ear alone.

4. Ripperger's article is an exhaustive accumulation of evidence that saccharin as used for sweetening effect is entirely harmless and without physiological action.

[F. W. P.]

The Journal of the American Medical Association.
July 13, 1907.

1. *Taylor, R. W. *Deformities of the Vulva from Early and Late Indurating Edema.*
2. Boque, E. A. *The Relations of the Dental Arches to Pathologic Affections of the Nasopharynx and Adjacent Parts.*
3. Derby, G. S. *Ligation of the Carotid Artery for Malignant Recurrent Hemorrhage of the Vitreous.*
4. Carroll, J. J. *Metastatic Conjunctivitis in Gonorrhea.*
5. Stevenson, M. D. *Treatment of Lachrymal Obstruction.*
6. *Baker, A. R. *The Treatment of Strabismus in Young Children.*
7. Wyeth, J. A. *Technic of Appendectomy.*
8. *Tinker, M. B. *Gall Duct Obstruction Caused by Movable Kidney.*
9. *Jones, A. A. *Abdominal Symptoms of Thoracic Disease.*
10. *Folin, O. *The Acid Intoxication Theory.*
11. Nilken, A. *Acute Spermatocystitis.*

12. TODD, F. C. *A Method of Performing Tenotomy which Enables the Operator to Limit the Effect as Required.*
13. WALLIS, J. F. *Cutaneous Tuberculosis.*
14. RICHARDS, G. L. *Technic of the Operation for the Removal of the Middle Turbinate.*
15. BRÖDEL, M. *How may our Present Methods of Medical Illustration be Improved.*
16. BOTTOMLEY, J. T. *Operation for Exstrophy of the Bladder.*
17. *CURTIS, H. H. *The Etiology and Recent Treatment of Hay Fever.*

1. Taylor describes with illustrations the condition of indurating edema of the vulva, a condition which he believes to be too little recognized. It is almost always due to syphilis, most commonly as a complication of the hard chancre but sometimes as a late lesion; a few cases have seemed to result from chancroids or herpetic lesions. A hard, non-pitting induration of the vulva, more or less extensive, is the result. Antisyphilitic treatment if begun early may cause complete disappearance, but otherwise the swelling persists indefinitely. Some cases go on to atrophy with marked deformity, kraurosis vulvæ, elephantiasis, gangrene and phagedema.

6. Baker protests against the common practice of deferring the treatment of strabismus in children until the patients are able to read test type. In 75% of the cases the condition develops before the fourth year, and in a large proportion the onset is gradual. At first it is only occasionally present; in the second stage it is more or less constant but alternating between the two eyes; finally it becomes constant and monocular. Some cases recover spontaneously. In the first stages often the use of atropine for a few days in both eyes will effect a cure. If this fails, glasses must be prescribed at once by retinoscopy; the author has fitted glasses with most satisfactory results in children less than a year old. In the second stage, that of alternating squint, the results of correcting errors of refraction are also very satisfactory in overcoming strabismus. In older children great patience is often required in efforts to restore the fusion sense, using prisms and decentered lenses, atropin long continued, and insisting upon avoidance of close work for the eyes. The occlusion bandage should be given a trial. If these methods fail, operative treatment is necessary. The author, however, rarely operates on children under ten years of age, and regards operation as a confession of defeat.

8. Tinker calls attention to the occurrence of gall-duct obstruction from the pressure of a movable kidney. He cites two cases, in one of which was found a distended gall-bladder for which no cause could be found except that the right kidney was in a position where it might easily press on the ducts; in the other case it is not proved that the symptoms had anything to do with the biliary tract; both cases were relieved by fixation of the kidney. The author's technic of kidney fixation is described, essential features of which are separation of attachments to the colon, suturing the split capsule to aponeurotic structures in the incision and keeping the patient on the back or the right side for two weeks after the operation.

9. Jones describes cases of thoracic diseases in which the symptoms were referred so positively to the abdomen that it was, or might well have been, believed that acute abdominal disease was present. The conditions mentioned include pleuritis, pneumonia, empyema, aneurysm of the heart, angina pectoris and aortitis.

10. Folin's article is a searching review of the origin and development of the theory of acid intoxication in diabetes, from the early observations of β-oxybutyric acid by Stadelmann and of acetone and diacetic acid by v. Jaksch in 1883, to the recent studies of Knoop, Embden, Baer and Blum. The presence of β-oxybutyric acid, diacetic and acetone being unquestioned, these later investigators have attempted to trace their evolution. Knoop by linking the fatty acids in different stages of oxidation with the benzene group was able to arrest the process in certain intermediate stages, and to test the results by feeding them to dogs. From this work he reached the conclusion that only those fatty acid side-chains from which the carbon atoms can be split off two at a time can undergo oxidation in the animal body. Oleic, palmitic and stearic acid can thus give rise to but one molecule each of oxybutyric acid, whereas caproic acid can yield three, and butyric acid four. Embden passing these substances in aërated blood through excised livers, and Baer and Blum feeding them to patients, all reached confirmatory results. It is probable that the amino-acids which form from proteids can also produce acetone bodies. Much, however, remains unexplained, even if these findings are accepted. Why does the oxidation of carbohydrates diminish the formation of acetone bodies? why do not lactic and oxalic acids play a part in the assumed acid intoxication? and why does not the alkali therapy have more striking results? These questions are not answered.

17. Curtis summarizes the causes of hay fever or hyperesthetic rhinitis as, (1) an adynamic state of the nervous system, the correction of which is important; (2) pathologic changes in the nasal mucosa, such as polypi and deviations of the septum; (3) constitutional disorders such as gout, obesity and disorders of digestion, and (4) external irritants such as gases, dust, pollens, etc. Recently attention has been directed to Dunbar's antitoxin (pollantin) treatment. Opinions received from 34 prominent rhinologists are published, the majority being unfavorable to the claims made for the treatment; a number, however, indorse it. Medicinally suprarenal extracts hold the first place in treatment, in conjunction with constitutional treatment. Climatic treatment is the most efficacious of all. [F. W. P.]

THE LANCET.
JULY 13, 1907.

1. SIMPSON, W. J. R. *The Croonian Lectures on Plague. Lecture III.*
2. *CORNER, E. M. *The Most Frequent Hernia in Childhood and its Significance.*
3. DREUW. *On the Treatment of Lupus.*
4. WARNER, H. F. *A Case of Acute Lead Encephalopathy Following the Use of (?) Diachylon Pills as an Abortifacient.*
5. PIRIE, A. H. *A New Method for Using X-Rays.*
6. NORTON, E. E. *The Prophylactic Use of Antitoxin in Epidemic Diphtheria.*
7. EDINGTON, A. *On the Use of a New Fluid for the Hematocytometer.*

2. Corner brings forward further figures and tables to confirm his opinions that herniæ in children are not congenital, but acquired, owing to the weakness of the abdominal walls and their distention by the gas fermentation going on inside the intestines. As to the most frequent hernia he finds a ventral hernia between the recti to be the most common. This fact has generally escaped notice. [J. B. H.]

BRITISH MEDICAL JOURNAL.
JULY 13, 1907.

1. *MONSARRAT, K. W. *A Clinical Lecture on the Simulation of Malignant Disease by Chronic Inflammatory Affections of the Sigmoid Flexure.*
2. *BROOK, W. H. B. *The Diagnosis and Treatment of Appendicitis.*
3. BURGESS, A. H. *One Year's Work in Acute Appendicitis.*
4. *THOMAS, J. L. *The Treatment of Complications and Sequelæ of Gastric and Duodenal Ulcers.*
5. *BARLING, G. *Some Observations on Nephrectomy, with Statistics of a Series of Cases Operated on During the Last Ten Years.*
6. GREAVES, F. L. A. *A Case of Pyonephrosis Containing Typhoid Bacilli in Pure Culture.*
7. HEARD, R. *Two cases of Suprapubic Litholapaxy.*
8. HELLIER, J. B. *Suppurating Vaginal Cysts.*
9. WHITEFORD, C. H. *A Case of Spreading Peritonitis Cured by Drainage of Pelvis, the Fowler Position and Rectal Instillation of Saline Solution.*
10. PATTON, W. S. *Preliminary Note on the Life-Cycle of a Species of Herpetomonas found in Culex Pipiens.*
11. HEATH C. J. *On the Duty of Restoring Hearing by Operation in Chronic Aural Suppuration.*

1. Monsarrat reports two cases of sigmoiditis, one chronic adhesive perisigmoiditis, the other subacute in-

filtrative sigmoiditis. In both diagnosis was confirmed by operation. The differential diagnosis from tuberculosis is made chiefly on the absence of tuberculosis elsewhere in the body. From malignant disease it is often impossible to distinguish from clinical signs. Microscopical examination at operation is the only sure method of diagnosis. For treatment of the acute forms he recommends rest in bed with a milk diet and daily enema. For chronic forms, a diet leaving little residue, olive oil enemata for constipation, and astringent rectal irrigation of .2% protargol when there is diarrhea.

2. Brooks speaking on the treatment of appendicitis concludes as follows: (1) The majority of cases will get over the attack if treated on simple medicinal lines. (2) The appendix should be removed during the quiet period. (3) During the attack the patient should be carefully watched and on any sign of fulmination operated on at once. (4) If there be suppuration, if all is going on otherwise satisfactorily, evacuation should be deferred until after the fifth day, care being taken not to open the general peritoneal cavity. If in doubt, operate. No elaborate search should be made for the appendix, it can be removed later. (5) In general suppurative peritonitis, the use of drainage, massive infusions and calomel is advised.

4. Thomas advises what amounts to the Ochsner treatment in perforated gastric and duodenal ulcers; *i. e.*, rest, no food, morphia, no palpation or manipulation of the abdomen, which should be firmly swathed, and washing the stomach free from contents. If operation is done, wipe out stomach contents from the abdomen, drain and leave alone, and do not sew up the perforation or disturb the intestines hunting for it. By this procedure he has been remarkably successful in his cases.

5. Barling has done 39 nephrectomies with one death. He uses the retro-peritoneal lumbar incision and advises a large enough opening to give plenty of room. He prefers to tie off the pedicle by its separate constituents rather than *en masse*. He has never done partial nephrectomy and considers it very rarely advisable.

[J. B. H.]

Deutsche Medizinische Wochenschrift, No. 24.

June 13, 1907.

1. *Determann, H. *Poultices, Compresses and Packs.*
2. Rumpf. *Simulation and Dissimulation of Disease.*
3. Koppen, M. *Simulation in Mental Disease.*
4. Ledderhose, G. *The Detection of Simulation in Surgery.*
5. Groenouw. *Simulation of Eye Diseases.*
6. Stenger. *Simulation of Ear Diseases.*
7. Schill. *Simulation of Diseases among Soldiers.*

1. Determann reviews the history of hydrotherapy since its introduction into general medicine, and claims that an extensive plant is unnecessary and that much can be accomplished with simple means at the patient's home. The physician must understand just what physiological changes he wishes to produce and then use his hot and cold applications, compresses, poultices and packs in the various forms which the author describes at some length. Marked changes in the viscosity of the blood can be produced by these simple means, and many chronic and inflammatory processes are favorably influenced thereby.

[L. G. M.]

Münchener Medizinische Wochenschrift, No. 23.

June 4, 1907.

1. Hammerl, H. *Rutan, a New Disinfectant.*
2. *Berger, C. *Gastric Erosions.*
3. *Bittorf, A. *Tenderness of the Testicle in Renal Culculus.*
4. *Mann, M. *Killian's Tracheo-broncheoscopy in the Diagnosis of Diseases of the Trachea and Bronchi.*
5. Kalb, O. *The So-called Hand-walking in Infantile Paralysis.*
6. Theilhaber, A. *Variations in the Structure of the Normal Endometrium and Chronic Endometritis.*
7. Ritschl. *Contracture of the Fingers, Due to Injury to the Extensor Tendons.*
8. Knauth. *Medico-legal Uses of the Widal Reaction.*
9. Federschmidt. *A Case of Tetanus Treated with Antitoxin.*
10. Goldschmidt, A. *Acute Poisoning with Citrophen.*
11. Determann. *A Simple Apparatus to Measure the Viscosity of the Blood.*
12. Neumann, F., and Fellner, O. *The Influence of Cholin and the X-Ray on the Course of Pregnancy.*
13. Bárány, R. *The Investigation of the Reflex Vestibular and Optical Movements of the Eyes, and their Significance in the Focal Diagnosis of Eye Palsies.* (Concluded.)
14. *Perutz, F. *Abdominal Arteriosclerosis.* (Concluded.)

2. Berger describes two fatal cases of hematemesis in which the autopsy showed superficial erosions of the mucous membrane of the stomach, but no bleeding vessel. In the second case the erosions extended far down into the small intestine. The disease is fairly well characterized, by profuse and repeated hematemesis in patients who have never presented symptoms of ulcer, and by entire lack of gastric pain. It has been described by Dieulafoy under the name of "exulceratio ventriculi simplex."

3. Bittorf calls attention to tenderness of the testicle on the same side as a hitherto undescribed symptom of stone in the kidney. He has observed its presence in several cases of renal calculus, and its absence in gall-stones and abdominal neuroses.

4. The value of Killian's bronchoscopy and tracheoscopy is well shown by Mann, of Dresden, who reports various interesting cases in which the exact diagnosis was possible by this method only. Especially worthy of mention is a case of primary carcinoma of the bronchus, in which the tumor could be seen through the bronchoscope, and a part of it removed through the tube with instruments.

14. The subject of abdominal arteriosclerosis as a cause of serious symptoms is one that has received considerable attention of late. Perutz gives a good critical review of the literature and relates personal experiences. The cases may be divided roughly into two groups: those resembling angina pectoris, and those in which abdominal symptoms predominate. In the former the familiar symptoms of angina appear, only the pain is localized in the epigastrium instead of in the chest. Lighter cases show merely paroxysmal attacks of pain in the epigastrium without the anxiety and dyspnea of angina. The second class of cases presents striking symptoms, consisting chiefly in colic, meteorism and constipation. The greatly distended colon may be plainly outlined against the wall of the abdomen. Physical examination usually reveals tenderness over the vertebral column near the navel, and signs of arteriosclerosis of the thoracic aorta or peripheral vessels. The blood pressure may be greatly elevated during the attacks, as noted by Pal. In some cases, especially those in excessive smokers, there seems to be only a functional derangement of the abdominal vessels, for the attacks disappear with the removal of the irritating substance. In the treatment diuretin is the remedy *par excellence*, often producing prompt relief. This is probably due to its vaso-dilating influence. The allied substances, agurin and theocin, have a similar action. Strophanthus or digitalis, iodide of potash and the nitrites are also to be employed as circumstances indicate.

[W. T.]

Berliner Klinische Wochenschrift, No. 19.

May 13, 1907.

1. *Strauss, H. *Pseudo-anemias.*
2. Westenhoeffer. *The Nature of Tumors.*
3. Schaps, L. *The Injection of Salt and Sugar into Infants.*
4. *Kast, L., and Meltzer, S. J. *The Sensation of the Abdominal Viscera, and the Effect on it of Cocaine Injections.*
5. Sochs, H., and Ternuchi, Y. *The Inactivation of the Complement in Salt-free Media.* (Concluded.)
6. Minor, L. *Quinquaud's Phenomenon in Drinkers and Non-Drinkers, and in various Nervous Diseases.* (Continued.)

1. Under the name of pseudo-anemia, Strauss calls attention to a common condition in which the skin and often the mucous membranes are pale, but there is no true

anemia, the hemoglobin showing normal values. The cause is either decreased transparency of the skin, or local ischemia. Spasm of the peripheral arterioles is evidently present in lead poisoning and probably also in chronic nephritis. In a large group of functional nervous disorders the apparent anemia is probaby due to such a local contraction of the peripheral vessels, more or less permanent. Such patients frequently show other signs of instability of the vasomotor system, such as dermographia, flushing of the face, etc. The general condition should be treated, the use of iron being manifestly superfluous.

4. Experiences of various surgeons, especially Lennander, have apparently shown that the intestines and the other abdominal viscera are devoid of sensation. This work has been based on laparotomies on human beings under cocaine anesthesia. Kast and Meltzer, of New York, show in this article that the apparent anesthesia of these parts is entirely the effect, through the circulation, of the cocaine employed. Experiments on animals showed that the normal and, to a greater degree, the inflamed viscera are capable of sensation, while the injection of a small amount of cocaine promptly produces anesthesia.

[W. T.]

ZEITSCHRIFT FÜR KLINISCHE MEDIZIN.

BD. 61, HEFT 5 and 6.

1. *HOFBAUER, L. *The Causes of Orthopnea.*
2. *RUBENSTEIN, H. *Lymphadenoid Metaplasia of the Bone Marrow.*
3. *TALLQVIST, T. W. *The Pathogenesis of Pernicious Anemia with Special Reference to Bothriocephalus Anemia.*
4. GEIGEL, R. *Dicrotism in Aortic and Mitral Insufficiency.*

1. That the dyspneic patient cannot lie comfortably in bed is usually explained by stating that in a sitting posture the accessory muscles of inspiration are mechanically better placed for work. However, many dyspneic patients are compelled only to assume a sitting position in order to sleep. Further, if this explanation were true, tracings made of the respiratory movements should indicate either an impeded inspiratory phase or the action of accessory muscles of inspiration. However, in many patients such is not the case. In individuals with pleural effusion whose dyspnea is particularly considered in this paper, tracings of the respiratory movements show, on the contrary, that expiration is impeded or there is evidence of the action of the accessory expiratory muscles. While awake the accessory expiratory muscles act and there is no dyspnea even in the recumbent posture. During sleep they cease to act and the patient is only able to get sufficient air in the sitting posture. In the recumbent posture the dome of the diaphragm extends farthest towards the head, while in the sitting posture it has its lowest position. In this latter position the pulmonary vital elasticity is at its maximum, and the stretched lung contracts forcibly to expel the air. In pleural effusions the lung is not compressed but the fluid prevents expansion of the lung, and so there results a deficient elasticity of the lung which is the cause of the dyspnea. This deficient elasticity is increased by the sitting posture because the diaphragm has a lower position and so expiration is favored.

2. Rubenstein reports a case of a boy of sixteen with marked anemia, and no absolute leucocytosis. However, there was a marked relative lymphocytosis, and autopsy showed a lymphoid marrow. He discusses the classification of such a case. He does not regard it as belonging to the lymphatic leukemias, but thinks it may be considered a case of myelogenous pseudoleukemia (one of Pappenheim's groups of pseudoleukemia). Of this he is not certain, so he suggests the name "anemia perniciosa myelopathica," as describing the condition.

3. This is a paper of over 100 pages in length with a bibliography of 136 titles. It presents a number of facts derived from a chemical and experimental study of the relation of bothriocephalus worms to anemia, and the attempt is made to apply these results in an explanation of the pathogenesis of pernicious anemia. Tallqvist finds that the bothriocephalus worms contain a lipoid substance which is strongly hemolytic, and a proteolytic enzyme. This hemolytic lipoid is not excreted by the worm but is freed with the disintegration or digestion of the segments of the worm. Fed to animals or injected subcutaneously, the lipoid produces a distinct anemia which has many of the characteristics of pernicious anemia. Bothriocephalus worms from cases which are anemic, in contradistinction to those from cases not anemic, show definite evidence of disintegration. During this disintegration, which is probably in part an autolytic process, the hemolytic lipoid is set free in the intestine of the host, and as it is not injured by the digestive ferments there present it may be absorbed and produce a hemolytic action with resultant anemia. Other flat worms do not contain this substance, but similar substances are found in several organs of man, notably the intestinal mucosa. In the digestive disturbances of anemia such substances may be absorbed and so lead to the production of a pernicious anemia. Similar hemolytic lipoids occur in malignant tumors and may explain the anemia so often associated. The proof of the presence of a hemolytic lipoid in the bothriocephalus worm is satisfactory as also is the evidence of disintegration of the worms from cases with anemia. However, the result of giving the substance to animals is not to the reviewer very closely analogous to the blood picture of pernicious anemia, and the attempted explanation of the pathogenesis of pernicious anemia on this basis seems somewhat far-fetched. [H. A. C.]

THERAPIE DER GEGENWART.

JUNE, 1907.

1. *ERB, W. *The Treatment of Neurasthenia.*
2. *SCHNÜTGEN. *Senator's Treatment for Gastric Ulcer.*
3. LENNÉ. *Further Observations on the Dietetic and Medicinal Treatment of Diabetes.*
4. *KLEMPERER, G. *The Treatment of Acute Articular Rheumatism.*
5. KUHN, P. *Buttermilk in Infant Feeding.*
6. *DAMMANN. *Emotional Disturbances and their Treatment.*

1. Erb, while admitting the important part played by the psyche in neurasthenia, does not believe in the psychic origin now so commonly invoked for this disease. The mental symptoms, according to him, are merely part of the general "irritable weakness" of the entire nervous system. In the treatment, rest, nourishing food and fresh air, with hydrotherapy form the essential features. Later on, the nervous system is to be strengthened by gradually increased active and passive exercises, sports of various kinds, hydrotherapy. In the use of the last, mild procedures are best. A change of climate either to the sea or the mountains is often beneficial, and withdrawal to a sanatorium is essential in severe cases. The Weir-Mitchell treatment has not proved valuable in his hands. Erb deplores the present neglect of drugs for physical methods of treatment, for he has often seen great benefit from medicine, especially iron and arsenic, alone or combined with nux vomica, quinine and other nerve tonics. Psychotherapy is quite in place to combat the various autosuggestions and to give the patient a firm conviction of an approaching cure.

2. Senator's diet for gastric ulcer stands midway between the low diet of Leube and the liberal one of Lenhartz. Its distinctive feature is the administration of gelatin in considerable quantities, the gelatin serving both as a food and as a hemostatic agent. In 50 patients treated in this way, Schnütgen reports (from Senator's clinic) a mortality of 4%. A favorable result, either improvement or "cure," was obtained in 94%; the average duration of treatment in these was only three weeks. In most of them the weight showed no decrease, or even a slight increase.

4. Theoretical considerations led Klemperer to the belief that the action of the salicylates in acute rheumatism is largely due to the production of hyperemia in the joints. To test this belief, he treated 68 cases with Bier's passive congestion exclusively. The results were good, and in cases of slight or medium severity a cure was usually obtained. The relief of pain was, as a rule, prompt and striking. However, out of 19 cases which proved refractory to congestion, 10 were promptly cured with salicylates, and in general the results with congestion

were somewhat inferior to those obtained with the drug. He believes that the salicylates produce hyperemia in the joints and exert also a slight bactericidal action, and advocates therefore a combination of the two methods.

6. After classifying the various diseased states of the emotions, and describing the general treatment, Dammann proceeds to a warm recommendation of bornyval for all excited states, especially hallucinations. It produces quiet without stupor or sleep, and has no after-effects. It was efficacious in nervous dyspepsia and in palpitation. Bornyval, or borneol-isovalerianic ester, combines the two active principles of valerian, the ethereal oil and valerianic acid, and is given in pearls in the dose of 0.25 gm. (4 gr.). [W. T.]

Correspondence.

AN APPEAL TO THE AMERICAN MEDICAL PROFESSION.

New York, July 30, 1907.

Mr. Editor: On May 8, the day following the meeting of the National Association for the Study and Prevention of Tuberculosis, there appeared in the *North American* of Philadelphia a most sensational article by Mr. Richard J. Beamish according to which, during the discussion of Dr. Flick's report on medication, I was reported to have advised the killing of dying consumptives quickly and painlessly by heavy doses of morphine and to have admitted that it was my daily practice to do so. It was furthermore said in this article that there had been a bitter debate and that the session adjourned in confusion. These false statements were copied by nearly all the newspapers in the United States, were cabled to Europe and made the rounds in the papers and magazines of England and the whole European continent. In spite of explanations and denials I had sent to the Associated Press, in spite of a strong letter written by Dr. George Dock, the presiding officer of the meeting, and sent to the leading medical journals of America giving the true version of my remarks, the false statement has continued to be published and republished and commented upon to the great detriment of the anti-tuberculosis crusade all over the world. For example, ignorant consumptives in St. Louis, who had read the sensational lie, refused the visit of the nurses sent to them by the Society for the Relief and Prevention of Tuberculosis. The *St. Louis Republic* which published this news item said, "Consumptives since they read that report apparently have a dread that the visit of the nurse may mean morphine to end their suffering." It became thus necessary to issue the following statement by order of Prof. Frank Billings, President of the National Association for the Study and Prevention of Tuberculosis:

"Various daily newspapers published on May 8 what purported to be a report of the remarks of Dr. S. A. Knopf, of New York, before the National Association for the Study and Prevention of Tuberculosis, in which he was made to say: 'It is my practice and your sacred duty when you see a dying consumptive before you to give the sufferer morphine in plenty that the end may come quickly and painlessly.'

"No statement was made by Dr. Knopf, but since, in spite of an immediate explicit denial by the doctor, a great many newspapers in this country and Europe continue to publish the false report as authentic news. Dr. Frank Billings, of Chicago, President of the National Association for the Study and Prevention of Tuberculosis, authorizes the following statement:

"'Quite apart from the false position in which the speaker was placed and the injury done him, the publication of such a piece of sensationalism cannot fail to have a very deleterious effect upon impressionable tuberculosis patients throughout the country and may keep others from seeking needed medical aid.'

"The following statement made by Prof. George Dock, of the University of Michigan, who presided at the meeting in which Dr. Knopf spoke, should preclude all further misunderstanding:

"'I heard clearly what Dr. Knopf said, I am sure that I know what he meant, and am sure that everybody in the room must have understood what he said. His words could not possibly be converted into the meaning given in the public press. It was perfectly clear that he meant to relieve patients in the last stages. Everybody knows this prolongs life while making it very much easier for the patient.'

"Livingston Farrand, *Executive Secretary.*"

I had hoped that this statement would put a stop to all further comments on and circulation of the sensational falsehood. I am free to confess that I have longed for the time when the lie would die out, for in spite of the loyalty manifested by my professional friends during these hours of trial, for which I beg them to accept my most heartfelt thanks, the ordeal had become almost unbearable.

It seems that such a lie dies hard and from time to time receives a new stimulus from the over-zealousness of some physician or layman. Thus, for example, through the courtesy of Dr. George H. Simmons, the editor of the *Journal of the American Medical Association*, I received a copy of the *Kansas City Journal* of last week, containing an editorial under the heading "Should Doctors Kill?" from which I quote the following:

"The question whether a physician is justified in shortening the life of a patient suffering from some incurable disease by administering anesthetics was given a fresh impetus recently by the declaration of Dr. S. A. Knopf before the tuberculosis congress in Washington advising that consumptives should be given heavy doses of morphine to hasten the end. To the credit of the profession it must be said that physicians generally repudiate the idea as atrocious and a violation of medical ethics. A Chicago physician, Dr. Charles Gilbert Davis, voiced this sentiment, saying: 'A physician who would make a statement of that sort should be taken out and hanged. The profession has not gotten so low that it must commit murder just because it has not yet discovered a cure for some disease. There is nothing incurable under the sun. Just because the cure has not been discovered, that does not mean that it never will.'"

In Dr. Dock's letter above referred to, as well as in the statement authorized by Dr. Frank Billings, the absolute falsehood of the respective newspaper report was clearly shown and it would seem that there was hardly an occasion for Dr. Davis to unburden his feelings for the benefit of the lay press.

Equally untrue was the report of the alleged "adjournment in confusion" and the "lively and bitter debate" which followed Dr. Flick's report, condemning the use of morphine and its compound. In refutation of this reflection made by Mr. Beamish on a body of scientific men composed of many of the leading American physicians, who have devoted their lives to the study and prevention of tuberculosis, permit me to publish, for the first time, an extract from a letter which was received recently by Dr. Joseph Walsh, the secretary of the section:

"I was present as secretary of the section at which you spoke and instead of the section breaking up in confusion as was stated in the newspapers, the section closed in the perfectly regular way, and your statement as generally understood by the medical men seemed to be generally agreed with."

I beg the Medical Press of the United States to copy this communication in the hope that it will help individual members of the profession to refute once for all the inconceivable proposition that any physician true to his calling could possibly propound such a doctrine as shortening the life of any patient entrusted to his care. To the individual member of the profession in this country and abroad I address a personal appeal to embrace every opportunity to disabuse any individual who may labor under the misapprehension that I or anybody else of the American profession recommended shortening the lives of consumptives or any others by the administration of chloroform, morphine or similar narcotics. I make this appeal not merely for my own sake but above all for the sake of truth and for the sake of consumptive sufferers in this and in other countries.

Truly yours,

S. A. Knopf, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 27, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	6	1
Chicago	—	—	Waltham	6	1
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	5	—
Baltimore	—	—	Brookline	1	0
Cleveland	—	—	North Adams	6	2
Buffalo	—	—	Chicopee	15	11
Pittsburg	—	—	Northampton	7	1
Cincinnati	—	—	Medford	3	—
Milwaukee	—	—	Beverly	3	—
Washington	—	—	Leominster	—	—
Providence	—	—	Hyde Park	1	1
Boston	173	57	Melrose	1	0
Worcester	36	10	Newburyport	—	—
Fall River	75	53	Woburn	3	2
Cambridge	20	6	Marlboro	2	0
Lowell	64	32	Westfield	4	2
Lynn	16	3	Peabody	—	—
New Bedford	38	19	Revere	9	1
Springfield	19	7	Attleboro	4	2
Lawrence	26	15	Clinton	4	2
Somerville	19	3	Adams	—	—
Holyoke	16	11	Gardner	1	1
Brockton	11	3	Milford	—	—
Malden	8	2	Watertown	2	1
Chelsea	16	6	Plymouth	—	—
Salem	9	2	Weymouth	2	0
Newton	8	2	Framingham	—	—
Haverhill	13	1	Southbridge	1	1
Fitchburg	—	—	Wakefield	—	—
Everett	6	2	Webster	—	—
Taunton	—	—			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 24, 1907.

STONER, G. W., surgeon. Directed to proceed to El Paso, Tex., San Diego, Cal., and other ports on the Pacific coast and Canadian border, for special temporary duty, upon completion of which to rejoin his station at Ellis Island, N. Y. July 20, 1907.

MCMULLEN, JOHN, passed assistant surgeon. Granted extension leave of absence for seven days. July 18, 1907.

MCMULLEN, JOHN, passed assistant surgeon. Granted leave of absence for five days. July 24, 1907.

VON EZDORF, R. H., passed assistant surgeon. Granted leave of absence for two days. July 23, 1907.

KING, W. W., passed assistant surgeon. Directed to proceed from Tuckerton to Atlantic City and return, for special temporary duty. July 22, 1907.

STANSFIELD, H. A., passed assistant surgeon. Granted leave of absence for three months from July 12, 1907, with permission to go beyond the seas. July 18, 1907.

HOLT, J. M., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Holt for two months from June 20, 1907, amended to be effective from July 7, 1907. July 18, 1907.

VOGEL, C. W., passed assistant surgeon. Relieved from duty in the Philippine Islands and directed to return to the States, reporting his arrival at San Francisco. July 20, 1907.

CREEL, R. H., assistant surgeon. Relieved from duty in the Philippine Islands and directed to return to the States, reporting his arrival at San Francisco. July 20, 1907.

LYALL, R., acting assistant surgeon. Granted leave of absence for three days from July 11, 1907, under paragraph 210, Service regulations.

OWEN, H., acting assistant surgeon. Leave of absence granted Acting-Assistant Surgeon Owen for thirty days from June 1, 1907, amended to be effective from August 1, 1907. July 18, 1907.

RODMAN, J. C., acting assistant surgeon. Granted leave of absence for fifteen days from July 1, 1907. July 17, 1907.

SEAVEY, L. T., acting assistant surgeon. Granted leave of absence for 21 days from August 15, 1907. July 19, 1907.

WELLS, R. S., acting assistant surgeon. Granted leave of absence for thirty days from June 1, 1907, account of sickness. July 18, 1907.

WELLS, R. S., acting assistant surgeon. Granted leave of absence for thirty days from July 1, 1907. July 17, 1907.

MORRIS, G. A., pharmacist. Granted leave of absence for fourteen days from August 10, 1907. July 22, 1907.

WATTERS, M. H., pharmacist. Granted leave of absence for 11 days from July 23, 1907. July 17, 1907.

HALL, L. P., pharmacist. Granted leave of absence for fourteen days from July 23, 1907. July 22, 1907.

APPOINTMENT.

DR. HARRY M. FRIEDMAN appointed as acting assistant surgeon for duty at Philadelphia, Pa., July 18, 1907.

DR. LOUIS A. THUNIG appointed acting assistant surgeon for duty at Stapleton, N. Y., declined appointment.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The thirty-fifth annual meeting of the American Public Health Association, including the United States, the Dominion of Canada, the Republic of Mexico, and the Republic of Cuba, will be held at Atlantic City, N. J., from September 30 to October 4, inclusive.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 3, 1907.

L. W. BISHOP, passed assistant surgeon. Unexpired portion of leave revoked. Ordered to the "Missouri" August 1.

C. W. C. BUNKER, acting assistant surgeon. Ordered to the "Lancaster."

F. D. CHAPPELEAR, acting assistant surgeon. Resignation accepted to take effect July 31, 1907.

J. A. MURPHY, surgeon. Detached from the "Des Moines" and ordered to the "Dolphin."

H. M. TOLFREE, passed assistant surgeon. Detached from the "Dolphin" and ordered to the "Des Moines."

C. G. ALDERMAN, assistant surgeon. Ordered to the Naval Hospital, Puget Sound, Washington.

RECENT DEATH.

DR. EDGAR ELTINGE, retired, a physician formerly well known along the Hudson River, died at his residence in Kingston, N. Y., on July 27, at the age of seventy-nine years. He came of a medical family, dating back to colonial times, and was graduated from the College of Physicians and Surgeons, New York, in 1852. In 1884 he removed to Brooklyn, where he practised until three years ago, when he returned to his old home at Kingston on account of failing health.

BOOKS AND PAMPHLETS RECEIVED.

Nutrition and Dysentery. By U. N. Muderji, M.D. (Edin.). Calcutta: S. K. Lahiri & Co. London: Kegan, Paul & Trench. 1906.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. VI. 1907.

Practical Legislation for the Prevention of Blindness from Ophthalmia Neonatorum. By F. Park Lewis, M.D. Reprint.

The Abortion of Pneumonia. By V. Lehman, M.D. Reprint.

Rational and Effective Treatment of Hip-Disease. By P. Bruce Binnie, M.A., M.D., B. S. (Melb.). Compiled by Alex. B. Binnie, M.A., M.B., B. S. (Melb.). Illustrated. New York: William Wood & Co. 1907.

On Treatment. By Harry Campbell, M.D., B.S., F.R.C.P. New York: William Wood & Co. 1907.

Manual of the Diseases of the Eye. By Charles H. May, M.D. Fifth edition, revised. Illustrated. New York: William Wood & Co. 1907.

Elements of Human Physiology. By Ernest H. Starling, M.D. Lond., F.R.C.P., F.R.S. Eighth edition. Illustrated. Chicago: W. T. Keener & Co. 1907.

A Dictionary of Medical Diagnosis. A Treatise on the Signs and Symptoms Observed in Diseased Conditions. By Henry Lawrence McKisack, M.D., M.R.C.P. Lond. Illustrated. New York: William Wood & Co. 1907.

A Manual of Surgery. By Francis T. Stewart, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Manual of Diseases of the Ear, Nose and Throat. By John Johnson Kyle, B.S., M.D. Second edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Eighth Annual Report of the State Board of Insanity of the Commonwealth of Massachusetts for the Year ending November 30, 1906. Boston. 1907.

Address.

THE PSYCHIC FACTOR IN DISEASE.*

BY DR. GEORGE CARROLL SMITH, BOSTON.

DURING the prevalence of the psychic epidemic, which amounts almost to a monomania in Boston, and is widespread over all New England, the writer has thought the attention of this society might be profitably focused for a brief hour upon this fad. I say *fad*, as it differs not in the least from similar delusions and makeshifts which have arisen, been exploited, had their nucleus of truth dissected out of them, and then dropped, under the searching light of scientific investigation. This epidemic differs in the following respects from that of ancient and medieval times: then the devotees and advocates were the ecclesiastics and people; now they are the various cults, some of the clergy, some of the people, and many of the physicians. There is nothing new in this idea, as it has existed from time immemorial; then why is it receiving so much attention? Is it not true that when no new thought comes to the front, old knowledge is raked over to see if there is not some idea in it which has not received sufficient attention? This factor is one which has not received sufficient emphasis — at least, so think the various cults, *et al.* — and as this method has biblical support it has become contagious. John Hunter said, "Everything new carries a greater weight and makes a deeper impression on a weak mind." It may be interesting here to note that all down through the ages, and especially in recent times, some of the greatest advocates of small and great problems, to establish their selfish sophistry and cunning, have wittingly misinterpreted that good Book which was designed to uplift and teach us a higher standard of living.

The powerful effect of the presence of the cheerful and optimistic family physician, speaking words of encouragement to his patient, has long been recognized not only by the doctor but by the by-standers as well, and, in numerous instances, at one interview in the doctor's office an issue of blood has been stanched. The palsied have walked, the deaf been made to hear, the dumb to speak, and the blind to see, but these, to the uninitiated, apparently miraculous cures, all save the first, took place among hysterics, hence the psychic treatment has reached its most conspicuous prominence and success in this effection. But in neurasthenia, hypochondria, melancholia and many other psychoses, as well as organic diseases to which there is almost always a neurasthenic element added, it has of late received renewed attention, and has in some hands been carried to unwarranted length, like electrotherapy, hydrotherapy or the appendix and ovariotomy craze, till now every case that is not clearly an organic heart, lung, stomach or kidney disease is at once declared to be psychasthenic and amenable to psychic treatment. The only reason for such an error is indolence, too great haste, or inability to make a correct diagnosis. When you reflect how difficult it often is to differentiate a general paralysis, a disseminated sclerosis or an exophthalmic goiter from a neurasthenia; a stomach neurosis from a carcinoma of that organ; a functional from an organic headache, etc., you can readily see how much easier it is to make snap diagnoses, and thereby save ourselves days, and perhaps weeks, of hard study to discover the latent disease.

The writer will endeavor in this paper to set forth his views upon the value of the psychic factor in the treatment of the so-called functional nervous diseases, where it is supposed, by some, to be our sovereign and only remedy. As it is generally conceded to be our most reliable method of treating hysteria, I shall not further allude to this disease, but devote my time chiefly to neurasthenia, briefly alluding to its congeners, hypochondria and melancholia. Every physician has to do with neurasthenia, as it complicates, to some extent, probably all organic affections in adults, and is often met with as an idiopathic functional disease, inherited or acquired. I am sure that we make the diagnosis of the idiopathic form much less often now than ten years ago, as long experience and study have improved our methods of diagnosing this affection. Sometimes long study of the case is necessary before the organic affection as the source of the diseased function is discovered. I will briefly cite the histories of a few cases seen during the past ten years. These are fairly typical of those which frequent the office of a doctor who has to do with chronic diseases, as well as the office of the general practitioner. The principal method of treatment used was psychotherapy, though in some instances other therapeutic methods were also used. Full details of these cases are for brevity omitted here, but later a routine outline of treatment follows.

CASE A. Female. Age thirty-six. Single. Music-teacher. Father had melancholia. Mother had tuberculosis and died when patient was very young. The child grew up in the care of her father, later was brought under the care of a hypochondriacal stepmother. After her father died she was obliged to support herself teaching music, which she found very taxing; she was compelled frequently to work far into the night, and very soon thereby found she was not sleeping well; then began to worry about her insomnia, till she got so she could not sleep at all. She then lost courage and began to cry much of the time. Her appetite waned, and the bowels became constipated. She was annoyed with palpitation, and her memory failed. After consulting several physicians, she was sent to a nervine asylum and treated for a number of months, then to the various cults, until she was thoroughly instructed in the worst of all methods used for the cure of such cases, viz., auto-suggestion. When she came to me she was continually repeating to herself, and audibly, "I am going to sleep to-night, I am going to sleep to-night," keeping her obsession constantly before her mind. There was motor inhibition — she would take two hours to dress herself if allowed. She was analyzing her sensations and accusing herself for her deplorable state. Physical examination showed no evidence of organic disease. This was clearly a case of beginning melancho-

* The Annual Address before the Rhode Island Medical Society, June 13, 1905.

lia. The treatment consisted in taking her away from all relatives, securing for her a good boarding place with a large, sunny room and a good nurse. Then the writer made out a program of mental and physical exercises for her which kept her busy all the time, with occasional resting periods. Her days were spent with music, art, French and swimming lessons, long walks, matinées, reading the standard periodicals. She was required to tell what she read from day to day. No one was allowed to discuss her health with her. She was given better subjects for thought, and for a few nights a mild soporific, then a placebo for awhile, finally nothing. After four months she was cured. The treatment was essentially re-education; the substitution of good ideas for bad, total change of environment, good air, sunlight, and, most important of all, occupation, but the greatest care was used to make her work pleasant, and to have a period of seriousness followed by one of fun. One year has passed without recurrence.

CASE B. Civil engineer. Age twenty-six. Patient first came to me when he was in college, with all the classical stigmata of neurasthenia inherited from and further nurtured by a hysterical mother. He was very thin and underfed from fear of eating. By a slow process of re-education he has gotten free of his symptoms after *seven years* of persistent mental training; but now, when he has an acute attack of indigestion, the gastro-intestinal symptoms last longer on account of his heritage. He is now filling a very prominent position in a neighboring state, and I referred him to an eminent doctor in New York if needed at any time. I was quite surprised, six months ago, to receive a letter from that physician, saying that my patient had called upon him and he had found tuberculosis in the left apex, and had advised his coming on to see me, which he did several days later, when his râles had disappeared and he was quite well again. Attention is called to this case for three reasons:

(1) It was one of the most obstinate of my cases which yielded perfectly to psychic treatment.

(2) The long time required for training.

(3) To call attention to the fact that the best diagnosticians may mistake functional nervous diseases for organic.

CASE C. Clergyman. Age thirty-one. Patient's father, mother and two brothers were neurasthenic. A third brother was successfully treated by me for melancholia. Patient had a nervous shock at fourteen, which affected his eyes. The eye muscles were cut several times. At twenty-one, had nervous prostration, melancholia with suicidal tendency. Has suffered since with neuralgia of various parts of the body, but quite often beginning in the pit of the stomach. Ten years ago the pain was accompanied with chills, fever, vomiting and jaundice. He now has fatigueability, anorexia, indigestion, post-cervical ache, numbness and formication of the limbs. His nerve reactions are much quicker than normal, and he is very introspective. His gall-bladder region is exceedingly sensitive. This case illustrates the not uncommon occurrence of an organic disease in a neurasthenic patient. This patient bought an abandoned farm, worked on it for six months and regained his health.

CASE D. Male. Age nineteen. Has always had headaches. Seven years ago was properly refracted, and the headaches became less frequent, till now they recur once a month, and are of the migrainous type. Is easily excited, and has emotional fatigue. Two years and a half ago fell from a hammock and got a diarrhœa which has persisted at intervals ever since, four or five movements daily. Any excitement, like getting ready for a party, or to go to the theater, was enough to produce it. There was no mucous or blood in the stools, no tenesmus or griping. Had lost confidence in his bowels and rectal sphincter, and must always plan to relieve the former before any public undertaking. His father is nervous and has this form of diarrhea. Now the fact that this boy early heard his father complain so much of this particular symptom, coupled with his fall, was quite enough to determine the same symptom in himself. Drug treatment, directed by a very competent physician for two years, had failed. This patient was trained to control his sphincter and to regulate his daily movement after breakfast by the clock, and the force of correct habit soon asserted itself. He was under treatment about two months, and one year later reported himself well.

CASE E. Male. An artist. Age twenty-seven. Family history negative. Patient well till three years ago. Has since suffered with dyspepsia. His meals are simple, but he bolts his food. Has constipation or diarrhea most of the time. Has had at times a good deal of gas in the stomach and bowels. The past six months has been blue. Worries a good deal; is tired all the time, and occasionally sweats on emotion. Has been told to rest, and tried it without benefit. He has lost confidence in himself to do good work, and recently gave up an order to paint a portrait because he feared he would fail if he attempted it. Two psychic treatments sufficed for the cure.

Occasionally it has been found necessary to isolate patients, but rarely to give them long periods of rest according to the plan established by our highly-respected pioneer, Dr. S. Weir Mitchell. An exact knowledge of the patient's life, including his environment, habits and mental resources, will alone determine the question of isolation. The question of absolute rest depends for its solution more upon his previous occupation and his temperament. If his life has been particularly strenuous in a mental or physical sense, he should have a short period at least of absolute rest in bed, with a milk diet which taxes the digestion least, and favors sleep, which is the greatest restorative. Most neurasthenics and practically all hypochondriacs and melancholiacs do best when frequently diverted, and kept busily occupied in varied but pleasing and interesting as well as serious pursuits.

For the purpose of study, the writer has taken at random a hundred neurasthenic cases from his card histories, and divided them into two great classes: (1) Those born with an inherited predisposition — children of tubercular, alcoholic, syphilitic and nervous parents especially — are predisposed to the affection, as the digestion of such patients is readily impaired, and their delicate nervous protoplasm suffers still more from faulty metabolism. Such patients are very susceptible to indigestion, mental or physical shock, fright and emotional disturbances, and from their number furnish us with our best types of traumatic neurasthenia. A large number of our nervous dyspeptics belong to this class, and by carefully watching their numerous bodily sensations the latter soon become pathological, and the habit of auto-suggestion is established and erelong such patients may become hypochondriacal.

(2) Those whose heritage is good, but who acquired the affection by bad environment, improper training in youth at home and in school; persons who worry for fear of not making both ends meet; and those who have habit spasm.

Of the 100 cases analyzed, 43 were clearly hereditary, 57 acquired. Forty-eight co-existed with faulty metabolism. It was interesting to note that low metabolism was the stigma in the majority of the hereditary cases, and in some of the acquired class, so that it is often difficult to assign some patients to either class, while in some of the acquired cases a severe disease of the gastro-intestinal tract in childhood could be elicited, which, of course, gave rise to the faulty metabolism. The frequency of tuberculosis in their parents clearly shows the necessity of stamping out this far-reaching scourge as a means of prophylaxis in diseases of the nervous system, as well as for other numerous well-known reasons.

Of the 48 metabolism cases, 30 were of gastro-intestinal origin; 7 followed severe illness; 9 were traumatic; 6 were brought on by shock or mental strain or worry; 2 followed the use of alcohol; 1 followed continual absorption of toxine from decayed teeth; 1 co-existed with floating kidney; 2 were due to the use of a stomach tube.

No cases in this series were found due to overwork, excessive use of drugs, eyestrain, nasal obstruction, middle ear disease, or disturbed or deficient sleep, unless we except Case A, in which insomnia was the ultimate cause of the slump.

The method adopted by the writer in the treatment of cases is essentially the same as that set forth by Professor Oppenheim in the "Psychotherapeutische Briefe" published last year, with this exception, that I do not carry this out by correspondence, as I have found office instruction served the purpose, and to save your time and patience I will briefly describe the treatment of a neurasthenic case of the common type, which comes to our office daily, which will show sufficiently the method involved in the psychic treatment of the functional diseases which are supposed to be amenable to cure by this method. The most conspicuous symptoms complained of by such a patient are fatigue, palpitation, constipation, diarrhea, insomnia, headache, loss of memory, worry, phobias, irritability. It is necessary to detain you now with only the most prominent of these. The patient is told that such symptoms are experienced at times by all human beings; the only difference between his sufferings and that of the rest of mankind is that his symptoms have become accentuated by giving them more attention, until they now last longer, and are more intense, and to eradicate them entirely it is necessary that he should understand their origin and nature, then he can readily see how they are to be avoided and eliminated. He cannot be too often reminded of the wisdom of the saying, "As a man thinketh in his heart, so is he." Re-education is our watchword. It is explained to him that the more nervous a man is, the more readily he reacts to irritations from within and without. Let us first study fatigue, as it is one of the most common symptoms.

Fatigue is a state wherein, owing to over-activity of an organ, the nutrition suffers and halts. Under the Edinger law, an old pathological principle has recently been revived, to wit, increased function leads first to increased growth, but when carried to excess, particularly if spasmodic and irregular, it terminates in atrophy and degeneraton of the structures concerned, and is followed, *pari passu*, with an overgrowth of the surrounding structures.

Wells says, "Fatigue seems to be due to an intoxication with products of the excessive metabolic activity, and part of the symptoms, at least, seem to be due to acid intoxication. Among the metabolic products of muscular activity are known to be creatin, creatinin, sarcolactic acid and carbon dioxide. When the activity of a muscle is violent or prolonged, the sarcolactic acid and CO_2 accumulate, being formed faster than they can be removed." Halleck says fatigue shrinks the nucleus of a cell 50%. It required a long time for us to learn that we could not rest our brains by going into a stiff game of golf, tennis or polo; but physicians to-day who think and observe, know that the same brain innervates the muscles as the special senses and intellectual faculties. They also know that the sympathetic nervous system participates in the same hardships as the cerebro-spinal system. Indeed, upon the intregity of the former depends the kind and amount of work of the latter. Note the lessened activity of the arterio-sclerotic, and his ready fatigue.

Now, the fatigue of the neurotic may be physical, mental or emotional. The first two rarely occur, and the former is so generally harmless, and, indeed, so beneficial in early life, it may here be ignored. Charcot said a child under fifteen, when fatigued, stops working, while an adult forces his brain to continue. Again, an adult has grave responsibilities, which often weigh so heavily in consciousness that he cannot suppress them with other thoughts, and the emotional fatigue becomes superimposed. Of course, when mental fatigue is accompanied with worry, only harm can result. Every observer will agree with DuBois that emotional fatigue is psychical when due to worry, unpleasurable sensations, anger, passion or fear. Here unquestionably the fatigue is due to several factors, among which is the perverse function of the vaso-motor system regulating the blood supply to the nerve centers; but by far the most important factor is the habit of auto-suggestion. These patients are tired from habit before they start out to do anything. This, of course, is purely psychical, and their mental representations must be clearly explained to them, as due, perhaps, in the first instance, to fear, anger, worry, etc., but later to an auto-suggestion. This establishes the habit. The writer finds the fatigue habit, like most other habits, dates back to childhood, when everything is learned by repetition. Ribot says, fatigue in every shape is fatal to memory. The impressions received under such conditions are not fixed, and the reproduction of them is very laborious and often impossible. When the normal conditions are restored, memory comes back.

The habit of auto-suggestion must be broken. New thoughts must be suggested. An altruistic

philosophy will appeal to some, while stoicism may be accepted by others. At all events, such patients require a good deal of suggestion, persuasion and encouragement. Professor James says the human individual lives usually far within his limits. He possesses powers which he fails to use. He energizes below his maximum, and behaves below his optimum. His life is contracted like the field of vision of an hysterical subject. The existence of reservoirs of energy that habitually are not tapped is most familiar to us in the phenomenon of "second wind." Ordinarily we stop when we reach the first effective layer of fatigue. We have walked or worked enough to desist, but if an unusual necessity forces us on, the fatigue gets worse up to a certain critical point, when gradually, or suddenly, it passes off, and we are fresher than before. We have tapped a level of new energy. This may go on indefinitely. Professor James quotes the Yoga exercises for increasing our will. The power that we do not use up completely can be brought, more and more, into use by faith. Faith is like the manometer of the will, registering its pressure.

Palpitation is next explained to our patient. He is told how it may arise. Numerous causes are cited, like over-eating, fermentation, shock, emotion, fright, strong tea or coffee, smoking, intestinal parasites, ovarian irritation, etc. Then the specific cause of *his* palpitation is sought after and found. The method of its intensification and prolongation is analyzed by showing him how the attack first arrested his attention and fixed his observation, so that he became introspective and repeatedly began to listen for the pulsation, increasing it thereby, and prolonging its duration, as he developed the acuteness of his hearing. His attention is called to the fact that when he changes his position so that he cannot hear it or his attention is diverted, he is no longer conscious of the palpitation, and to enforce this he is told that when the writer examined him with his attention concentrated upon his heart, it beat very forcibly and rapidly, but later, when his mind was fixed upon some other subject, the pulsation became normal. He is next shown how he may invoke palpitation by running up stairs, or going through some hard stunts in the office, and yet, as soon as he rests, or is diverted for a few minutes, he is unconscious of the beating. On the other hand, if he persists in studying it, he becomes more sensitive till he can, by force of will, set up palpitation, and can even become conscious of the pulsations of the arteries of the body. By carrying this idea a little farther, slight irregularities of the pulse are readily explained. He is shown how these pulsations, after a time, may become painful, on the ground that any disagreeable sensation long continued is painful. The cause of the first attack of indigestion is then sought, and most often found due to constipation, over-eating or bloating, which is readily explained as arising from faulty habits. The frequency of the repetition of the faulty habit prolongs the duration of each attack until it becomes quite permanent. Now, a healthy man should not, under ordinary circumstances, be conscious of the processes of his own circulation, digestion, peristalsis, etc., but by introspection this *is* possible, and gives rise to painful sensations. Rarely does the writer rely upon psychic treatment alone to relieve palpitation, because there are many other curative agents which give immediate relief, while the former requires long training. Among these agents is an ice-bag over the pericardium, which acts by virtue of its temperature, weight and suggestion. A pelotti, a kind of truss, suggested by Dr. Crofton, acts well also, emphasizing more the pressure and suggestion. Reflex stimulation of the vagus by deep breathing, or by smelling salts, often gives quick relief. The bromides are our best drugs, and the reader prefers the ammonium salt, as it does not depress, except in such cases as require depression. It is quite easy to see how a person lacking in nerve force may eat some indigestible food and suffer slight sensations of discomfort, which cause, at first, watchfulness, which soon leads to fear and worry to aggravate his distress, till he has really inhibitory impulses from his brain, causing motor insufficiency; and if maintained for a long time may cause secretory disturbances. Now the writer does not believe this is frequently the case, but does happen occasionally, even in the neurasthenic, and much oftener in the hysteric and melancholic. Whenever stasis occurs, of course fermentation takes place, which further intensifies the painful sensations, and, worse than all else, intensifies the fear and worriment. As *fear* and *worry* are really materially involved in all the other symptoms discussed in this paper, the writer is reluctantly compelled, for brevity's sake, to give them only casual notice. The best way of overcoming simple functional constipation and diarrhea is education of the patient.

Insomnia arises from a great variety of causes; among the most important of which are headache, reflexes from the heart or abdomen, or vaso-motor insufficiencies, which lead to cerebral flushing. These sudden irritations of the cerebrospinal centers quite suffice to cause restlessness enough to prevent the patient from falling asleep, or make him sleep so lightly that a little extra irritation from within or without awakens him often. Here, too, we see the force of habit in the most eclatant form. Active business men as well as society people, especially those of emotional temperament, carry the thoughts of the day to bed with them, and go on thinking about them well into the night. This habit must be stopped by happily diverting their evening thoughts into other channels which are full of fun and pleasure. Games, theaters, places of amusement, long promenades in company with cheerful and bright companions, singing or reading aloud usually serve this purpose best. In other cases, a warm bath or light calisthenics, in which the patient can use his brain as well as muscles, may be necessary. To this end, deep breathing exercises, which create a little muscular fatigue while fixing the attention, act well.

Another large class suffers from insomnia be-

cause of extremely sensitive peripheral reflexes from the skin as well as internal organs. These reflexes must be sought, found and corrected. Hydrotherapy is our best remedy with this class. The diet should be carefully regulated. Bromide, in frequent doses through the day, may be necessary to break up the habit.

The treatment of headache depends also upon its etiology. Often it is secondary to insomnia, gastro-intestinal reflexes or palpitations, and when the patient is relieved of such causes his headache disappears. Quite often, however, in the writer's cases, was toxemia the cause of the headache, especially that occurring early in the morning and disappearing after breakfast. The common sources of this toxemia are sometimes a pyorrhea alveolaris, a fermentation and putrefaction of the gastro-intestinal contents, coprostasis, insufficiency of the liver and kidneys, latent suppurative foci, perverse metabolism, gallstones, bladder diseases, etc. Not infrequently it is difficult to discover the toxic origin of the headache, and repeated examinations must be made, and the most careful eliminative inductive study instituted before an accurate diagnosis can be reached.

The subjects of auto-toxemia and faulty metabolism are of such pre-eminent importance in this study I am sure you will readily go with me into the most recent authoritative literature pertaining to this subject. Auto-intoxication, or intestinal infectious toxemia, is studied by watching the changes which the carbohydrate food and the proteid undergo in their passage through the intestine. The fermentation of the carbohydrates occurs in the lower ilium and colon; the putrefaction of the proteid takes place in the large intestine. Putrefaction, except in pathological conditions, never occurs above the ilio-cecal valve. In the cecum and ascending colon, putrefaction and fermentation are active together, hence bacteria are found most abundant in the cecum. Strasburg states that one-third of the weight of normal solid feces may consist of bacteria, and this proportion is greatly increased in diarrheas and lessened in constipation. Herter found that administration of indol to healthy men causes frontal headache, irritability, insomnia, and confusion; and a long continuance of the absorption of indol causes a strong reaction for indican in the urine and is sufficient to cause neurasthenic symptoms. A. E. Wright says, regarding the bacteriology of the intestinal canal, the bacillus coli and the streptococci allied to the pneumococci are the chief bacteria found in the colon in health and these are enormously increased in morbid conditions of the colon, and may spread to the small intestine, stomach and gall bladder. It is probable that the bacterium coli is the cause of the toxemia in neurasthenia. The products of fermentation — gases, fatty acids and lactic acid — are mostly absorbed by the intestinal wall. The gases are excreted again in the expired air. The fatty acids are either oxidized and expired, or eliminated unchanged in the urine. The fermentative products not absorbed go off as flatus. Putrefaction of protein produces ammonia, sulphuretted hydrogen and other gases, CO_2 and H and a number of bodies — aromatic oxyacids, phenol, skatol, indol, etc. These are absorbed by the intestinal wall, the gases are expired. The other substances are excreted in the urine as compounds of sulpho-glycuronic acid, or go off in the feces. Ortweiler and Müller have shown that the amount of indican in the urine varies with the length of time the feces remain in the colon; with the activity of the peristalsis; and, most of all, with the site of the putrefaction. If protein putrefaction extends up into the small intestine, the urine indican is much increased. Müller says in Kongress für innerer Medicin that many infectious diarrheas owe their origin to poisons taken in, already formed in the food; such poisons occur in meat, milk and cheese. Other cases may be due to the excretion, through the intestinal mucosa, of poisons formed in diseased tissue elsewhere, sepsis, pneumonia, uremia, etc. Such cases come under the head of infectious toxemia. Nothnagel took the same view while the French, English and American schools use the term auto-intoxication for this condition. You are all familiar with the usual symptoms of this toxemia — obstinate constipation, headache, giddiness, neuralgia, ill-humor, and so on. Gastric vertigo and tetany are explained by the French as auto-toxic, while F. Müller and other German scientists regard them due to a nervous reflex. The latter trace epilepsy, eclampsia and visceral psychoses to acetonemia, Albee and others to auto-intoxication. With either conception of the etiology of these toxemias, no one would for a moment expect to accomplish much in their treatment with psychotherapy. Improvement is only brought about by using every means at our disposal: (1) Elimination by all the emunctories of the body, but especially by the bowels and kidneys. (2) Hydrotherapy. (3) By adapting the food to the competency of the digestive organs. (4) Climatology — with special reference to sunlight, winds, etc. (5) Mental and physical exercises; in short, everything which will induce a better metabolism must be resorted to. Von Noorden says: " Mental action excites greater bodily activity by raising the potential energy of the nervous system." The nervous energy acts by setting free the muscular system. Psychical influence plays quite an important part in raising the potential energy of the nervous system, and in this manner arouses activity. Light and sunshine give rise to *muscular activity*, improve bodily metabolism, strengthen the action of the heart and lungs and favor the circulation of the tissue fluids; hence, light and sunshine must be regarded as very potent therapeutic remedies. In the same manner, Wolpert showed that cool winds act favorably by increasing bodily movements. These are, however, indirect methods of influencing favorably metabolism. Speck " found no alteration in gaseous exchange nor in heat formation when intense mental work was engaged in for a short period, and Atwater arrived at the same results after longer periods of three days." The standard taken for comparison was

the metabolism of an indivdiual in complete relaxation. Oppenheim found the same true for the metabolism of protein, and the latter, with Speck, affirms the same with regard to the excretion of nitrogen and urea during active mental work. Such scientific results should at least do away with formerly entertained notions concerning brain work.

To sum up, then, the requirements of the physician to practise psychotherapy successfully are:

(1) A strong personality.

"The mind casts a shadow just like the body."

"The mind of the doctor, in itself and in its manifestations, in conduct, manner, face, dress, ways, must, *ipso facto*, affect his patient for good or ill," says Schofield.

But we should remember, when striving to develop a strong and attractive personality, that the human side is by far the most important, or the saying of the witty Frenchman will apply to us, "He was born a man; he died a doctor."

(2) Thorough knowledge of the patient. The doctor must know his patient thoroughly, as Dr. Collins suggests, and, above all, should he know his mental habits and be able to put himself in his patient's moods, that he may make proper and helpful suggestions; otherwise he may antagonize his patient, or excite worse fears than he already has. We cannot regale a patient suffering with exophthalmic goiter by reciting Shakespeare, or relieve a melancholic clergyman by praying with him.

(3) Considerable knowledge of psychology is, then, necessary. Suggestions should always be made by the doctor, instead of the nurse, attendant or masseuse, who have had no training in this subject. And just here I would insist on exercising the greatest care in the selection of such attendants, as I am sorry to say the most of them have not yet learned that "silence is golden." The physician should have free hand in the selection of his consultants in these cases, as many of our best consultants on other affections, for want of knowledge of neurology, lack of interest in or patience with the functional neurotics, are not only incompetent, but do positive harm by incorrect diagnoses and bad suggestions. No better proof of this is needed than the obsessions of our daily patients, which have been fixed by former reputable physicians, under whose care they have at some time been. On the other hand, a good consultant will enlighten us, give us new zeal, and inspire our patient with a helpful faith. We are all, when in perfect health, or suffering from organic or functional disease, very amenable to suggestion.

The writer quite agrees with Dercum that "direct suggestion is most useful in hysteria, less valuable in neurasthenia, and least of all in hypochondria." Indirect suggestion is that generally employed in neurasthenia, but no general rule can be laid down which will apply to all cases. It should be remembered, however, that suggestive therapeutics is a synonym for psychotherapeutics, and it is the most powerful curative agent we possess in the class of cases alluded to, but it is a two-edged sword, hence upon your skill and tact in its use will depend your success. The assurance with which the physician says the patient will improve increases his faith. Unless your patient has faith in you, he should be encouraged, in a humane spirit, to put himself under another physician's care, since no doctor can successfully treat *all* his nervous patients.

(4) Broad, scientific medical training.

In the light of the foregoing, I am sure you will agree with me that in no other specialty is such a broad, scientific medical training necessary. As in every other method of treatment, a correct diagnosis must first be made, otherwise we may lose valuable time, and, perhaps, life, by treating a pernicious anemia, a latent tuberculosis, an interstitial nephritis, psychotherapeutically. A scientific, practical physician will use *every other therapeutic method at his disposal*, as well as psychotherapy. He will employ dietetics, hydrotherapy, electrotherapy, pharmacotherapy, isolation, rest, exercise, sunlight, pure air, winds, proper food and clothing, knowing that several remedial agents will often bring relief or cure more quickly than one alone.

Prophylaxis must always be kept in mind, as such a large percentage of neurotics trace the origin of their affection to their childhood. Parents should be educated along physiological and psychological lines. They should be taught to look after the environment and school life of their children as nearly all fixed habits are formed in early life by the repetition of simple acts; hence we see our purest examples of spasmodic tic in children who have learned them through mimicry. Dietetic and mental hygiene in youth will do much toward preventing mental slumps later in life. Barker has found that patients past middle life do not yield to psychotherapy so well as those between twenty and forty; first, because they are so opinionated; second, most people past forty already have organic disease. My experience confirms this view as applied to the functional neuroses, and I would like to add that the chief value of the psychic factor is in the care of organic diseases, as the functional affections are fast disappearing under the light of better diagnoses. I would emphasize, however, my belief that in *recent years* the eminent rôle played by psychotherapy is *wholly unjustifiable and misleading*.

The great mistake being made at the present time is in trying to incorporate the science of medicine with theology. The two sciences are just as distinct as law and medicine. The fundamental principles of right and wrong may be identical, but the deductive processes by which the sciences are built up are so different that the students of one know essentially nothing of the other. We of the medical profession, to-day, need the Bible to teach us morals, to make us humane, but not to teach us law or medicine. No man without a conscience founded on the highest sense of moral ethics is wanted in the medical profession. Let honesty prevail, then, from principle rather than policy. Let thorough earnest laboratory research, coupled with care-

ful clinical study, not only of disease, but of humanity, continue in the future, as in the past, to actuate our profession. Then our brilliant record of progress in the last half century will pale before the still greater achievements of the century upon which we have but just entered.

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Original Articles.

THE BLOOD PRESSURE AS A GUIDE IN THE TREATMENT OF HEMOPTYSIS.*

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In the treatment of no symptom or complication of disease does that old aphorism of Hippocrates, "Experience is fallacious and judgment difficult," seem so true as in that of hemoptysis. Consider the differing opinions and experience of so many and keen observers from almost time immemorial to the present day; and still the treatment continues to be largely empirical. More particularly does this Hippocratic maxim seem true with regard to the use of ergot. Were such experienced clinicians and careful observers as Wilson Fox, West, Ransom, Cornet, and many others entirely deceived in their opinion and experience as to the value of ergot, or, as I am inclined to believe, did they not meet with apparent success sufficient to warrant their conclusions? Still, we must admit, as Fowler observes, that "in the great majority of cases of hemoptysis with a limited area of disease, the bleeding ceases spontaneously, provided the patient keeps absolutely quiet and observes the ordinary rules which prudence suggests," and, therefore, he continues, "it is obvious that under such circumstances any remedy which is given sufficiently often may obtain an undeserved reputation." And this may be as true of the nitrites, now a popular remedy, through the writings of Hare and others, as of ergot.

Hemoptysis is a symptom dependent upon many and varying conditions, conditions difficult, if not impossible, to determine in every case. We have the underlying cause, the local process, its activity, degree of softening, and the state of the blood vessels in the diseased area; we have the individual diathesis; we have the various exciting causes, the activity of the circulation or blood pressure, the state of the nervous system, exercise, metabolic activity, mental excitement, causes dependent upon the sexual system, cough, and, doubtless, many others. It is, therefore, obviously, extremely difficult to judge of the effect of any remedy or to administer it with precision, and, indeed, one despairs of ever arriving at any great accuracy in the treatment of this symptom and congratulates himself that, in so many cases, it ceases without treatment.

In what I have to say in these notes regarding hemoptysis, I do not include those cases of overwhelming and fatal hemorrhages, obviously due to the rupture of an aneurysm in a pulmonary vein, for no treatment in such catastrophes is of avail. I refer rather to the less severe cases occurring generally in the earlier stages of the disease and particularly to those which are recurrent or persistent.

Of late years, since the sphygmomanometer has come into use, the blood pressure as a causative factor in hemoptysis has been receiving renewed attention, although the older writers were not unmindful of this factor, as witness Flint, who says: "There is a marked difference in different cases with regard to the activity of the circulation, or, to speak more definitely, of the heart as represented by the character of the pulse." And Wilson Fox, who says, in referring to the use of ergotine: "It is a remedy which should be used in severe and intractable cases attended by a *soft* and *rapid* pulse," or, as we should say now, a low blood pressure.

Lawrason Brown read last year a very suggestive paper before the National Association for Study and Prevention of Tuberculosis upon the treatment of hemoptysis by the nitrites, based on observations of blood pressure; and Hare, of Australia, in various papers speaks enthusiastically of his success and that of others with nitrite of amyl in hemoptysis, based on the well-known action of this drug in producing a marked and rapid fall of blood pressure.

Hare † evidently assumes that every case of hemoptysis results from a comparative increased blood pressure and reports sixty cases from his own practice and that of others in which nitrite of amyl was used, and in which, with one partial exception, "the bleeding ceased or became re-

* Read at the meeting of the American Climatological Association, Washington, May 7, 1907.

† The British Journal of Tuberculosis, Vol. 1, No. 1, p. 55.

duced to a mere staining of the sputa immediately — that is, within a minute or so."

Inspired by these reports, as well as actuated by the desire to see if we could obtain further light upon the value or worthlessness of ergot in hemoptysis we began, about a year ago, to take the blood pressure in cases of hemoptysis occurring at the sanatorium, and, so far as we were able, guide our treatment by the indication thus given.

A Janeway sphygmomanometer, with the wide cuff, was employed and the nurses instructed in its use.

As hemoptysis is such an alarming symptom and so often occurs without warning, our first effort was to stop the hemorrhage, and our blood pressure observations had, necessarily, to be more or less of a secondary matter. Furthermore the majority of cases occurred in the night or early morning, when the physician was not on hand to make or verify the observations or direct the treatment, so that the nurse at the inception of the hemorrhage followed the routine treatment, consisting of cracked ice, a small or large dose of morphia and atropine hypodermically, according to the urgency of the case, and the inhalation of nitrate of amyl, if it seemed to be indicated. Occasionally, only cracked ice was given as a placebo.

I have, however, eighteen cases, mostly recurrent, to report, in which the blood tension was taken at or as soon as possible after the hemorrhage began. In most of them, besides the immediate routine treatment above mentioned, if that did not suffice, either the nitrites or ergot were employed, depending upon the blood pressure; if this was comparatively high, the former was given, and if low the latter, whose physiological action, as we know, is an increase of blood pressure in the aortic system by a contraction of the arterioles through stimulation of the vasomotor nerves (Babcock, Kobert) and also, as Jacobi (quoted by Cushny) has shown, by direct action on the muscular wall of the vessels.

Hence, if ergot is of value, it would seem to be obviously so in a condition of lowered blood pressure when the hemorrhage might be considered to be more of a passive than an active one; and Babcock ("Diseases of the Lungs"), though he decries the use of this drug, very logically says: "If hemoptysis were in every instance due to relaxation and transudation, ergot might do good." Our reasoning was that if the blood pressure will enable us to determine these exceptional cases in which the hemoptysis is due to relaxation, why may not ergot be a rational indication in continued and recurrent hemorrhage — for the action of ergot is too slow to produce immediate results — and may not the success attributed to its use have occurred in just such cases? In a number of cases, whatever the blood pressure, if the indicated drug (by the blood pressure) appeared to exercise no beneficial influence upon the hemorrhage, we tried that contra-indicated by the blood pressure and apparently sometimes with success.

In order to obtain what might be considered a standard of blood pressure among tuberculous individuals, it was taken in 320 cases in the sanatorium, and the average was found to be 124 mm., Hg. Of the men it was 128 and of the women 115. Of 42 male patients the average blood pressure was 126, the highest 140, and the lowest 100. Of 43 female patients the average was 120, the highest 132, and the lowest 98. We, therefore, considered 126 mm. as the average blood pressure in tuberculous persons.

It must be remembered that the ordinary method we have of measuring the arterial blood pressure is not of precise accuracy, and apparently slight influences, such as mental excitement, physical exertion, the process of digestion, etc., cause it to vary considerably within certain limits. In the cases herewith given, for example, this variation is seen to be quite extensive. It is well to take the pressure several times at intervals in order to obtain a fair approximation of the real tension.

In the eighteen cases of hemoptysis, with the blood pressure herewith given, it is seen that the majority of them are below our average blood tension — some of them markedly so. The highest was 145 and the lowest 74; the average was from 109 to 119.

In nearly all the cases, when any treatment was considered necessary, the routine one, before mentioned, was at first employed, namely, ice, morphia combined with atropine, or heroin, with or without nitrite of amyl, depending upon the rapidity and amount of the hemorrhage. On the recurrence or persistence of the bleeding, either ergot or the nitrites, in the form of nitrite of sodium or nitroglycerin, were then tried, depending upon the blood pressure. If one of these two drugs did not appear to produce results, given according to the indication of the blood pressure, the other was exhibited whatever the blood tension might be. Both in certain cases seemed apparently effective, and both in others ineffective.

The detailed histories and charts of individual cases illustrate the varying treatment based upon the blood pressure, and the apparent results of the same. They also show how extremely difficult it is to estimate the effect of any one drug given for a complex symptom caused by so many and varying conditions, and they would also seem to indicate that the blood pressure, though of value as a guide, is by no means an infallible one; a conclusion which we should expect, for the tension is only one of the factors in this complex symptom.

These observations are, I am aware, imperfect and conflicting; they show nothing clearly. I trust, however, that they may throw some light upon the subject and indicate a little more definitely the path of treatment. I would suggest that the blood pressure should be taken of every sanatorium patient, since it can so readily be done in an institution as a part of the routine. We would then have this observation already at hand, as a guide, whenever a hemorrhage did

CASES OF HEMOPTYSIS AT THE MASSACHUSETTS STATE SANATORIUM.

	TIME OF OCCURRENCE.	AMOUNT.	BLOOD PRESSURE.	TREATMENT.	RESULTS.
A	3 A.M.	℥iii later. ℥ii or ℥iii.	110mm. Hg.	No treatment at first. Calcium lactate subsequently.	First hemorrhage ceased. Small hemorrhage later and streaked sputum.
B	Night.	℥ii first day. ℥iii second day.	116 at first; later period 102 to 122.	No treatment.	Two small hemorrhages only on two successive days.
C	2.15 A.M.	℥iiiss.	104 at 10 A.M.; 112 at 6.15 P.M. on the next day.	Heroin and cracked ice.	Apparently ceased.
D	About 4 P. M. and in night.	℥i twice, two successive days and clots.	100 to 120.	Morphia or heroin during hemorrhage; ergot later.	Clots continued about twelve days; *no increase* of blood pressure under ergot.
E	Not given.	℥ss to ℥v on two successive days.	112 to 154.	Nitrites, calcium chloride, codeia.	Apparently ceased on second day.
F	Early morning and during day.	From Nov. 25 to Dec. 11, ℥xliii.	94.	Morphia, atropine, nitrites, ergot for several days.	Ergot appeared to stop the hemorrhage.
G	9 A.M. 8.45 P.M.	℥iii ℥i.	126 following day; in 6 days later, 88.	Morphia, atropine, heroin, ice, mag. sulph.	Apparently ceased.
H	Not recorded.	℥ii to ℥iii. On two successive days streaks.	112 to 120.	Not recorded.	Not recorded.
I	Early A.M. and P.M.	℥x to ℥viii on various days.	85 to 98.	Heroin, morphia, atropine, nitrites, ergot.	Ceased, then recurred. Advanced case; died from sepsis.
J	1.30 A.M.	℥ss to ℥iii. Recurrent.	74 to 98	Ergot, ice.	Raised blood almost daily for nineteen days.
K	A.M. and P.M.	℥i to ℥iv. Recurrent.	110 to 120.	Morphia, atropine, nitrite of amyl.	Apparently ceased. Slight spitting subsequently.
L	4 A.M. 3 P.M.	℥iii. ℥iv.	130. 130.	Morphia, atropine, Epsom salts; later, nitrites, ergot.	At once. At once. Thereafter many recurring hemorrhages.
M	Night and P.M.	℥ss to ℥iiss. Recurrent.	120 to 130.	Heroin, Epsom salts.	Ceased; in a few moments followed by clots.
N	9.20 P.M.	℥ss.	119.	Heroin.	Ceased at once, followed by clots.
O	P.M.	℥i to ℥ss for several days.	130	Nothing at first. Ergot later.	At once. Recurred. At once.
P	Early A.M. P. M.	℥ii to ℥xv over many days.	120 to 135 before nitrites; 115 after.	Morphia, atropine, ice, nitrites, calcium chloride, aconite, salts.	Ceased after nitrites and aconite.
Q	A. M. P. M.	℥ss to ℥iv. Recurrent and persistent streaks.	113 to 145.	Morphia, nitrites; finally ergot continued.	Gradually ceased after ergot.
R	Willis. Early A.M. P. M.	℥ss to ℥iii. Recurrent streaks.	90 to 125.	Morphia, atropine, ergot.	Apparently ceased after ergot until blood pressure fell again.

18 cases.

occur. In one of our cases this was done for several days before the occurrence of the hemoptysis, and it was found that a fall in the blood tension preceded the hemorrhage. Ergot was used in this case continuously for several days — as the hemoptysis was recurrent — and with apparently good effect.

I have referred to our experience, which is similar to that of others, that in the majority of cases the hemoptysis occurs at night, or in the early morning hours. In eleven out of sixteen of the reported cases it will be seen that this happened. This fact throws some light upon the cause of the hemorrhage and at the same time gives us a hint as to treatment. It would appear to indicate that the blood pressure and sudden variations in pressure were a causative factor. Lawrason Brown thinks that Howell's theory of sleep offers an explanation of this; this theory being, in brief, that sleep is due to the fatigue of the vaso-constrictor center, and, in consequence, there is a dilatation of the peripheral vessels, when, in the early morning hours, the vaso-constrictor center is regaining its lost tone, variations in blood pressure result. To prevent this variation and equalize the blood pressure, Brown gives morphia and sodium nitrite between midnight and 2 A. M. It will be noticed that calcium lactate or the cloride was employed in several cases, on the coagulation theory. The cases are too few, however, to draw any definite conclusions, but my feeling is that this treatment is of small value.

Epsom salts are frequently used in our service and with apparent benefit, probably, as Babcock says, on account of the favorable effect of a laxative upon the "pulmonary circulation through stimulation of the splanchnic nerves, which are known to regulate blood pressure throughout the body."

Aconite has also been employed, but I need further experience to judge of its value.

In conclusion, from the experience in these reported cases and from our general experience, I would suggest a plan of treatment of hemoptysis somewhat as follows — provided, of course, that any active treatment seems indicated: First, a knowledge of the blood pressure of the patient from previous observations. On the occurrence of the hemorrhage, ice, morphia and atropine subcutaneously, and, depending upon the amount and rapidity of the hemorrhage, the inhalation of nitrite of amyl. A laxative dose of sulphate of magnesia, and, if the bleeding persists, or is recurrent, nitrite of sodium or nitroglycerin if blood pressure is high for the individual, or, if low, ergotin subcutaneously.

I am quite well aware that when I suggest the use of ergot I am uttering heretical doctrine, but in our experience it has apparently proved itself of value in at least a few cases when other remedies have failed.

I have to express my obligations to my resident physicians at the sanatorium, Drs. Dunham and Crane, who have conducted the detail of these observations and to whose experience and suggestions I am greatly indebted.

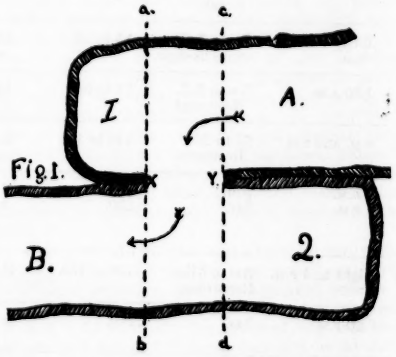
A SOLUBLE BOBBIN FOR INTESTINAL ANASTOMOSIS.

BY JOHN H. CUNNINGHAM, JR., M.D.,
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AND
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ALTHOUGH intestinal anastomosis has been practised more or less since the fourteenth century, it has only been used with anything like satisfactory results for the last forty years. The introduction of aseptic surgery rather than any new method or device has brought it to its present state of perfection.

All intestinal anastomoses up to the fifteenth century were done with the aid of some mechanical device, *e. g.*, dry goose trachea, cylinders of cardboard, cylinders of fish glue and wood. Employing these devices, the cut edges of the intestines were approximated over the cylinders and sutured with a continuous unsterilized raw gut suture. These operations were not attended with much success, not only on account of the mechanical devices employed, but also on account of the resulting sepsis, although a few cases are recorded in which the patient survived.[1]

We find the surgeons of the eighteenth century speaking of all wounds of the small intestine as fatal, but saying that all wounds of the large intestine should be sutured. Until the middle of the nineteenth century very few satisfactory results were obtained. The feeling in regard to intestinal anastomosis at this time is very well expressed by Weinn's article in 1818, in which he says that "the process of intestinal suturing is a very dangerous undertaking and the mortality following this procedure is much greater than where the process of repair is left to nature's resources."



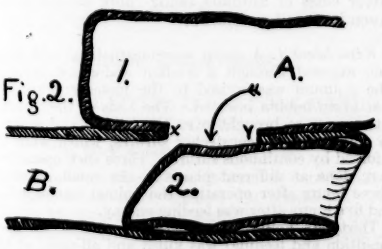
With the introduction of aspetic surgery began a new epoch of intestinal anastomosis. The subject received the attention of many surgeons from this time until the present day and many different mechanical devices have been advocated both for lateral and end-to-end anastomosis.

Until recently there has been no valuable data

as to the relative efficiency of lateral and end-to-end anastomosis,— a most important point.

Lately it has been proven by the experimental work of Cannon and Murphy [18] that in lateral anastomosis we get the following results (see Fig. 1): It will be observed that the circular muscular fibers cut at x, y, paralyzes the peristaltic movement between the lines a, b, — c, d; the food, however, is carried through this dead space, a, x, y, c, by the force of the stream behind. The food stream coming down the approximal portion of the intestine A is forced against the blind end I, and is not pushed through the opening x, y, until the pressure in part A is enough to overcome the obstruction between points x, y. After this blind end of gut has become filled the force behind pushes the food through the opening x, y, into intestine B. The food having gone through the opening x, y, is forced against the opposite intestinal wall b, d. As all the circular fibers are cut in the area x, y, there is another dead space at x, b, d, y. There are no peristaltic movements in this area to carry the food on, and when the food stream behind cannot force it, we get a stasis of food at this area. By feeding animals with food containing bismuth and studying their peristaltic movements by means of the Roentgen rays, Cannon and Murphy have proved that a stasis resulted in this area, and in a few cases in which indigestible food stuffs, *e. g.*, hay and hair are fed, an absolute obstruction occurred.

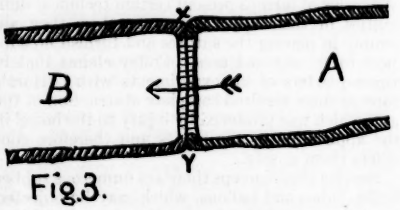
They found out further that another disadvantage of lateral anastomosis is that frequently in their experiments the peristaltic movement of the distal end 2 of intestine B, produced invagination of the blind end 2, closing the opening x, y, and thus resulting in complete obstruction. (See Fig. 2.)



In comparing the lateral method with the end-to-end method it can readily be seen that practically none of the circular fibers are cut and that the uninterrupted peristaltic wave forces the food by the line of incision x, y, into the distal portion of intestine B. (See Fig. 3.)

Thus in comparing these two procedures, we find that in the lateral method, stasis, subsequent dilatation and obstruction may result, while none of these factors arise in the employment of the end-to-end method. It is evident, therefore, that wherever it is possible the end-to-end method should be employed.

The technique of performing the end-to-end anastomosis is the next important question. Shall we simply suture the cut ends of intestine together, or shall we use a mechanical device to aid in the performance of this procedure? There is such a diversity of opinion in this matter that no definite statement can be made. The essentials in an end-to-end anastomosis are to complete the anastomosis quickly and to place the sutures accurately in order to prevent leakage and obviate a constriction at the site of the anastomosis. Operators familiar with intestinal work may



perform an end-to-end anastomosis as quickly and as accurately without as with a mechanical device, but it is fair to say that an operator doing an anastomosis for the first time can perform the operation quicker and more accurately with than without a mechanical device. It is very much the same problem as to whether one can darn a stocking quicker and better with or without a bobbin to sew over.

Without condemning anastomosis by simple nature, the rapidity and technique of placing the sutures is greatly facilitated when done over a bobbin of some other mechanical device. With a mechanical device we have the serous surfaces held in a position in which they are sutured. The device further serves as a conduit, thus minimizing any chance for leakage, as well as keeping the intestial lumen patent. There is a class of instruments the sole purpose of which is to prevent the escape of intestinal contents during the anastomosis.

These are applied to the intestines a short distance above the point of the incision and are not of actual service in performing the approximation. As it is the object of this paper to deal with only the latter class, they will not be considered here.

Mechanical devices of service in performing the anastomosis are best considered in three classes as follows:

1. Devices Which Aid in Placing the Sutures but Which are not Left in the Intestine.

Mudd's, Grant's, Lee's, O'Hara's,[7] Lepace's and Cabut's forceps. Wackerhagen's tube, Halsted's,[14] Praver's and Dorone's bulbs.

2. Unabsorbable Mechanical Devices.

Murphy's,[3] Graberini's, Juvara's and Jarborle's metallic buttons. Hayes's, Boari's,[9] and Ball's ivory buttons. Harrington's[4] and Granpazzi's segmented rings. Brochaw's and Caput's rubber rings. Collier's rubber tube. Clark's rubber bulb. Cazzini-Duplay's metal cylinder and Allingham's ivory tube.

3. ABSORBABLE MECHANICAL DEVICES.

Neuber's,[10] Bonnier's, Robson's [8] and Littlewood's decalcified bobbins. Ball's, Hayes's and Collier's decalcified bone buttons. Senn's [2] decalcified bone plates. Bailey's and Allingham's decalcified bone tubes. Jones's decalcified bone cones. Gill's decalcified ivory button. Abbe's catgut rings. Alexander's and Andrier's potato cylinders. Wackerhagen's [1] wafer cylinder. Metcalf's [12] sugar cylinder. Holenhausen's bread cylinder, and Bell's tallow cylinder. Cunningham's maccaroni bobbin.

Of the first class (*devices which aid in placing the sutures, but which are not left in the intestine*) the most prominent are the forceps invented by O'Hara, and Halsted's inflatable rubber bulb. All forms of forceps present certain technical difficulties in their application. Further, they aid simply in placing the sutures and furnish no support to the sutured area. Coffey claims that in three-quarters of his experiments with O'Hara's forceps there resulted complete obstruction of the gut, which was produced by injury to the bowel in the application of the blades and therefore considers them unsafe.

Besides these forceps there are numerous rubber bulbs, tubes and ballons, which may be objected to on the ground that having been introduced into the intestine sepsis may result by contaminating the surrounding area during their removal.

Of the second class (*unabsorbable mechanical devices*) Murphy's button, a most ingenious device as well as a most delicate piece of mechanism, stands out first and foremost and may be taken as the type. This button has been used most extensively and has yielded good results. The main objection to it, as well as to the other devices of this class, is that there is a heavy foreign body left in the intestinal canal, which may remain *in situ* and cause obstruction either by its lumen, which is small, becoming plugged, or by its weight, causing a sag or kink of the intestines. Another disadvantage of this button is the fact that its liberation depends upon the sloughing of the intestinal walls, which are clasped within the opposing edges, and that this sloughing may not stop at a point inside of the adherent surfaces, but may extend beyond and a perforation result. Numerous cases are on record in which the button has been found subsequently in the abdominal cavity. Moreover, the raw unhealed surfaces left within the bowel may become adherent or by contraction partially occlude the lumen.

Of the third class (*absorbable mechanical devices*) Neuber, in 1884, was the first to use one of these devices for intestinal anastomosis. He devised a bobbin of decalcified bone, which was inserted into the lumen of the intestine, the severed ends being drawn over the bobbin and a purse-string suture passed around each end to be approximated. While Neuber was the first to introduce the absorbable device, Mayo Robson's decalcified bone bobbin is the best known member of this class.

These absorbable devices have all the advantages of the unabsorbable ones and by their absorption can produce no after complications, disappearing, as they do, by the natural processes of digestion.

An ideal mechanical device to be used in end-to-end anastomosis is one which will insure the normal passage onward of the intestinal contents, one which can be easily inserted which will facilitate the rapid and accurate placing of the sutures, keep the lumen patent, hold the serous surfaces in position until they have become firmly adherent and then be digested or dissolved and pass off in the intestinal stream without producing any intestinal injury or after complications.

The idea of employing a maccaroni bobbin occurred to one of the writers (Cunningham) several years ago. Maccaroni recommends itself, because it is easily digested in the intestine, is cheap, and may be made sterile in its preparation. During the past four years it was employed experimentally with success, but no detailed observations recorded. A few months ago the writers, aided by Dr. W. E. Ladd, undertook a series of experiments to determine how long the bobbin remained undigested in the intestine, with the following results:

The maccaroni used was a large size commercial maccaroni, cut into cylinders 3 inches long by $\frac{3}{4}$ of an inch in diameter and bobbins of special design. (See Fig. 4.) These were sterilized by



Fig. 4

dry heat. The experiments were performed upon cats, dogs and sheep. The observation in the latter class of animals, being more accurate, are given in detail as follows:

Experiment 1. A sheep was anesthetized and intestine exposed through a median abdominal incision. The jejunum was incised to the mesentery and the maccaroni bobbin inserted. The ends of the inserted intestine were brought over the bobbin and sutured by interrupted Pagenstecher sutures, which were reinforced by continuous suture. Three such operations were done at different places in the small intestine. Three hours after operation the animal was standing and five hours after was feeding on hay.

Thirty-six hours after operation, aminal (in good condition and feeding) was killed and all three of the intestinal wounds were found to be healed, or at least to be firmly adherent. There was no leakage or sepsis. The maccaroni cylinders were completely disintegrated and no traces of them could be found in the intestinal tract.

Experiment 2. Operation same as Experiment 1. Three end-to-end intestinal anastomoses were performed over bobbins of sterile maccaroni, placed in different parts of the intestine. The edges were approximated as before.

Twenty-four hours after operation animal (in good condition and feeding) was killed. Intestinal wounds firmly adherent. No leakage or sepsis. The maccaroni bobbins had disappeared from the original site, but small pieces soft and partially digested were found in the intestinal tract beyond the points of suture.

Experiment 3. Operation. Two end-to-end anastomoses with maccaroni bobbin. Edges being sutured with only one continuous suture through all the layers of the intestine. Gastro-enterostomy was also performed with maccaroni as a mechanical device.

Twelve hours after operation animal (in good condition and feeding) was killed. The bobbin used in the gastro-enterostomy was found to have slipped into the stomach and was considerably softened although in no way disintegrated. The wound was clean but not as firmly adherent or in as good condition as the intestinal wounds. The bobbins in the intestine were found to be in position, considerably softened but not disintegrated. The serous surfaces were adherent and no leakage or sepsis was present.

These experiments tend to show that in the maccaroni bobbin we have a device which, besides facilitating intestinal suturing and holding the sutured ends in position until firmly adherent, serves as a conduit for the intestinal contents and at a period of time not under twelve hours or later than thirty-six hours, is digested and absorbed.

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Clinical Department.

VICARIOUS MENSTRUATION WITH A REPORT OF TWO CASES.

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VICARIOUS menstruation is such a rare condition that some have denied its existence. A study of the literature certainly leads to the conclusion that many of the reported cases are spurious. Still there are many others that hardly admit of a doubt, cases, for example, where vicarious bleeding has occurred regularly for years, but has always ceased during pregnancy. The condition has occurred at all ages from the first menstrual period to the menopause. Some patients show pelvic abnormalities obstructing the flow, while in others the pelvic conditions have been normal. There is great variability in the site of hemorrhage, some bleeding from the nose, some from the lungs, stomach, rectum, eyes, ears, gums, bladder, nipples or umbilicus. In some the bleeding has been confined to a nevus, a scar, a fistula or a leg ulcer. Usually the hemorrhage occurs from but one site, but a few cases have occurred in which at regular intervals corresponding to the menses there has developed a tendency to bleed in various if not in all situations. Such a case is the following:

CASE I. Mrs. E. F., aged thirty-six, applied for treatment at the Medical Out-Patient Department of the Boston City Hospital on Dec. 1, 1903. There was nothing of importance in the family history, particularly no hemophilia. She had two children, a boy and a girl, neither of them bleeders. The patient was born in England and came to America in 1898. Apart from an indefinite history of an attack of "inflammation of the bowels" she had always been well. She used liquor freely, frequently to the point of intoxication. The menstrual history was, up to the onset of her final trouble, normal.

In the summer of 1902 she began to suffer from menstrual irregularity and in December of the same year normal, uterine menstruation ceased wholly only to be replaced by the phenomena for which she sought relief. At more or less regular intervals, averaging somewhat less than four weeks, a dark colored rash would appear on the legs and more sparsely over the rest of the body. At the same time she would have nose-bleed and "blood-blisters" would appear on the lips, gums and tongue. Each attack lasted but a few days. Each attack left her paler and weaker than before, and in the intervals she did not regain her previous health. She complained also of headache, dyspnea, puffiness of the face and swelling of the feet. The bowels moved daily and the appetite was good. Her diet was ample in amount and mixed in character, including an abundance of fresh fruit. When first seen she was recovering from a severe attack.

Physical examination showed a well-developed and well-nourished woman in good general condition, but very pale. The area of cardiac dullness was slightly increased and there was a systolic murmur at the apex transmitted a short distance towards the axilla. The lungs, abdomen and abdominal viscera were normal. There was a fading hemorrhagic eruption, most marked on the legs, a large ecchymosis on the back of one hand and several small, hemorrhagic vesicles on the tongue and lips. The urine was normal.

The blood was as follows:

Hemoglobin, 45%; red corpuscles, 1,520,000; white corpuscles, 5,400.

A differential count of white corpuscles showed nothing abnormal. The most marked features of the smear were the achromia and the small number of platelets. No nucleated reds were seen. The coagulation-time was not studied, but the bleeding from minute punctures was unusually free and clotting appeared to be much retarded.

She was given iron, arsenic and calcium chloride and instructed to take in her food as much gelatin as possible. She steadily improved and at the end of a week there remained no evidence of the hemorrhages, except for the rapidly diminishing anemia.

The patient had prophesied her next attack for December 20, and as this date approached she was observed with both interest and skepticism. On the 21st she presented herself at the clinic in a condition that removed all doubts. There was a purpuric eruption on the legs and fore-arms, with a few spots on the trunk. There was slight bleeding from the mucous membranes of the nose and mouth. On the whole the severity of the attack was much less than before. She was not seen again until March 7 when she returned to the hospital in the midst of a very severe attack. She stated that in the interval she had had two others.

A second blood examination was made on March 11, with the following results:

Hemoglobin, 45%; red corpuscles, 2,912,000; white corpuscles; 15,100.

A differential count of white corpuscles showed nothing abnormal. There were no nucleated reds. There was marked achromia and marked variation in the size of the reds, the average being noticeably small. There was moderate poikilocytosis and slight polychromatophilia.

The woman was advised to enter the wards for the purpose of further study and treatment, but refused. She soon after became a patient of the Suffolk Dispensary. I am indebted to Dr. Clark of that institution for the information that the hemorrhagic attacks continued to occur at intervals approximating the menstrual periods. Each month she appeared to lose more than she regained and she finally died in an attack on Dec. 3, 1904.

To summarize: We have a woman who menstruated normally up to the age of thirty-five, when, without previous history of hemorrhages, menstruation ceased and she began to have regular, periodic attacks resembling hemorrhagic purpura. Severe, and finally fatal, anemia resulted.

There is nothing in this history to suggest hemophilia. There was no general, permanent tendency to bleed, no suggestion of the disease in the ancestors or children. Cuts and wounds healed as in normal individuals. Moreover, the age of onset is greater than in hemophilia, which rarely begins later than twenty-two.[1] Another condition which predisposes to hemorrhages in various parts of the body is cirrhosis of the liver and in this case the alcoholic habits of the patient strongly suggest its presence. The suspicion, however, could not be verified, and at best such a diagnosis would leave unexplained the close relationship between the hemorrhages and the menstrual periods. The physiology of normal menstruation is as yet but poorly understood, and one is certainly not justified in saying that in the case herein reported the periodical hemorrhages accomplished a function that would otherwise have been brought about by the normal uterine flow. In making the diagnosis of vicarious menstruation one merely registers the fact that the attacks resembled in their periodical occurrence the normal menses, which ceased when the attacks began, and that they were therefore somehow connected with that function. That they were truly vicarious in a physiological sense cannot be affirmed.

A review of the literature of the last twenty-five years shows very few cases like this one. Heitzmann,[2] in 1884, collected a number of cases of menstrual exanthemata, some of which were purpuric. In certain of these cases there was atrophy, under-developement or other marked anomaly of the uterus causing obstruction, and in one or two of these local treatment resulted in recovery. Rouvier[3] quotes Puech to the effect that out of 200 cases of vicarious menstruation 8 were from multiple sites, while out of the 334 collected by Rouvier 4 were from all parts of the body. In 1888 Butler[3] reported a case of a woman of alcoholic habits in whom the menses ceased for nine months. A general, hemorrhagic, vesicular eruption, together with bleeding from the nose and throat, occurred during this time, but it is not clearly stated that the attack recurred regularly at each catamenial period. She recovered.

I have found but four cases where, in place of the normal uterine flow, there occurred periodically a condition resembling the severe type of hemorrhagic purpura.

1. Barnes[4] described a case of Clark's. A woman of eighteen who had never menstruated began to have attacks every month of bleeding from the gums and nose and occasionally from the stomach, together with a purpuric eruption. She finally died of severe anemia in an attack. An autopsy showed, in addition to extensive hemorrhages in the internal organs, a rudimentary uterus and normal ovaries. In one of the latter was a recent, false corpus luteum.

2. Andrade (quoted by Barnes[5]) described a case in which hemorrhages from the stomach, nose, gums and skin replaced the normal menstrual flow. "Menstruation returned."

3. La Forte (quoted by Heitzmann[2]) reported the case of a woman of twenty-six who had had, since the age of fifteen, menstrual molimina, without actual flowing. At regular intervals there occurred bleeding from the lungs, nose and skin. The vagina was congenitally absent. A successful operation for the formation of a new vagina completely relieved the symptoms, normal menstruation being re-established.

4. Quite recently Schechner[6] has reported a case almost exactly like mine. A woman of forty-seven suddenly ceased to menstruate, the normal flow being replaced by subcutaneous hemorrhages and nose-bleeds of great and increasing severity. She finally died in an attack.

Fatal cases of vicarious menstruation are rare. In addition to the cases already referred to there are, in the older literature, a few dubious instances. In some of the cases reported as fatal, death was only in an indirect way due to vicarious menstruation. Kober,[7] for example, reported a woman with incipient tuberculosis in whom the normal uterine flow was replaced by regular, vicarious hemorrhages from the lungs. Each attack was followed by an acute process in the lungs. The patient finally died, but death was not a direct result of hemorrhage. In 12% of Rouvier's cases the vicarious bleeding was from a cancer of the stomach or a tuberculous focus in the lung. Two others died directly of hemorrhage, making a total mortality of 14%.

The following case represents a much different type:

CASE II. Miss S. J. C., age twenty-nine, a nurse. For the opportunity of reporting this case I am indebted to Dr. J. N. Coolidge, to whose service at St. Luke's Home she was referred by Dr. S. M. Gordon, of Fall River.

The patient knows of no bleeders in her family. Two brothers and two sisters are living and are not bleeders. She knows nothing about her mother's father, to whom one would naturally look for a history of hemophilia. She has no maternal uncles. Her

mother died with paralysis of both legs; she may have been syphilitic. No ancestors on her father's side were bleeders.

As long as the patient can remember she has been subject to severe nose-bleeds. She says that cuts and wounds bleed more with her than they do with others, and, as a child, she was always obliged to lie down when she cut her finger and hold it up. Blows always leave large ecchymoses. She once had a severe hemorrhage after the extraction of a tooth and was once in danger of her life as the result of bleeding from a wound on the leg. The resulting scar, however, indicates a wound of sufficient magnitude to be serious in a normal person. Seven years ago an abscess was opened without undue loss of blood.

Menstruation began at the age of twelve. The first period lasted two weeks and she lost a dangerous amount of blood. She continued to menstruate irregularly about every two weeks. Each time the uterine flow was preceded by nose-bleed for several days and was generally accompanied by bleeding from the gums. For the past four years there has been also a purpuric eruption. She never noticed blood in the urine, feces or sputum. She once vomited some black material that she thought was blood. The uterine flow was commonly severe, from six to twelve napkins being used. Sometimes the loss of blood was so severe as to incapacitate her for several weeks. These attacks occurred about once a year, always in cold weather.

She was first seen by the writer on Feb. 2, 1906, during a menstrual period which had commenced with a nose-bleed. Examination showed an apparently healthy young woman in good general condition and not pale. The only evidence of abnormal bleeding was a few small petechiæ on the fore-arms. The thoracic and abdominal viscera and the reflexes were normal.

An examination of the blood showed a normal percentage of hemoglobin and normal numbers of white and red corpuscles. Stained smears showed no abnormalities either in the differential count of leucocytes or in the morphology of the red corpuscles. The coagulation-time by the Brodie-Russell method was twenty-one minutes. The normal time by this method, according to Pratt, is four or five minutes.[9]

A guaiac test for blood in the feces, after abstinence from food containing hemoglobin for three days, was faintly positive.

Under treatment she improved rapidly, but the loss of blood at the menses continued to be excessive and the intervals short and irregular so that she was flowing more or less all the time. A day or so before each exacerbation of the uterine flow she always had nose-bleed and fresh crops of petechiæ. She was seen in April by Dr. Edward Reynolds, who found both ovaries diseased and recommended operation. Ovariotomy was performed by Dr. Wadsworth. The left ovary was triple the normal size and was cystic; it was removed without the tube. The right one was also enlarged and adherent with the tube to the back of the broad ligament. With some difficulty it was separated from its adhesions and removed with the distal half of the tube. There was considerable oozing from the bed of this ovary and from the two small punctures in the uterus made with the French hooks. The hemorrhage was not in any way alarming. Convalescence was perfectly uneventful.

For the first two or three months after the operation at the times when the menses were expected, she had slight nose-bleeds and hemorrhages from the gums, with a few spots on the skin. Then without any periodicity she continued to have occasional slight nose-bleeds and spots. About eight months after the operation she menstruated profusely, but had no accompanying hemorrhages from extra-genital sources. She was recently seen by the writer and appeared to be in excellent health. The coagulation time was nine and one-half minutes.

To summarize this case: A young woman, without family history of hemophilia, gives a story of a tendency to hemorrhagic conditions from early childhood. The first menstruation is accompanied by menorrhagia and thereafter each period is associated with an exacerbation of the hemorrhagic diathesis. Ovariotomy influences the periodicity but does not altogether abolish the tendency to hemorrhages.

This case is probably to be regarded as one of mild hemophilia, since the bleeding from the skin and mucous membranes at the time of the menses was merely an intensification of a permanent, though not well marked, hemorrhagic diathesis. It is a well-known and generally acknowledged fact that hemophilia is a disease of the male sex. But this rule is not an invariable one. Particularly if these mild forms are taken into account, the classical statement of Grandidier,[10] to the effect that only one bleeder in thirteen is a female, must certainly be modified in favor of the greater frequency of the disease in that sex.[11] The onset of the disease in this case in childhood is in accord with the generally observed facts in hemophilia. The fact that she was operated upon without undue loss of blood does not nullify the diagnosis, since bleeders quite frequently show the tendency to unusual hemorrhages only at certain periods. Litten[12] says that large surgical wounds are less apt to bleed dangerously than trivial ones, and even refers to a case in which Fordyce stopped a hemorrhage in a bleeder by enlarging the wound. According to Grandidier, women with slight hemophilia show little tendency to traumatic hemorrhage.

Female bleeders quite commonly suffer from profuse menstruation, but a study of the literature leads to the conclusion that there is not commonly at the monthly periods any increase in the tendency to bleed from other sites, such as was shown in my case. In some published instances, however, such exacerbations of the hemorrhagic tendency have occurred. Kehrer,[13] in 1876, mentioned three cases from the literature in which female bleeders had unusually severe manifestations of their disease at the time of the menses. Köhler[14] refers to a hemophilic woman who had severe bleeding from "all orifices," a few days before each period. Hadden[15] has reported a girl of fourteen in whom there was no family history of hemophilia. Purpuric spots had been observed at times for five years. There had been unusually severe hemorrhage from slight wounds, and two severe nose-bleeds. The first menstrual period was very severe and prolonged, and caused marked anemia. Blood punctures from the ears bled several days. There was a general purpuric rash. A subsequent menstrual period was associated with an abnormal loss of blood, but there were no petechiæ. The author considered the case one of hemophilia.

Extra-genital hemorrhages recurring at the

menstrual periods fall naturally into three groups, of which the two more unusual ones are illustrated by the cases herewith reported.

In the first and commonest form the uterine flow is replaced by bleeding from some other site, but there is no general hemorrhagic tendency. Such cases usually run a favorable course, so far as the general health is concerned, the vicarious hemorrhage causing no more unfavorable symptoms than normal menstruation.

In the second form, typified by Case I, the normal flow ceases and there is a general hemorrhagic tendency, with a picture like purpura hemorrhagica. The resulting anemia may prove fatal.

The third form, typified by Case II, is probably to be regarded as closely allied to, if not identical with, hemophilia. In the few cases recorded a family history of this disease is often lacking, but there are several common and suggestive features. There is generally a history of purpura, nose-bleed or severe bleeding from trivial wounds in childhood. The first menstrual period is apt to be associated with severe menorrhagia. The cases are spoken of as vicarious menstruation merely because, along with the normal monthly flow, there may be an exacerbation or a tendency to bleed present at other times as well. Uterine menstruation is absent in some cases, but in others, as in ours, it is excessive.

Surgeons are naturally and properly loth to operate on these cases of hemorrhagic diathesis. Yet it is natural to expect that ovariotomy will give relief where the condition shows a periodicity corresponding to the menses. Bartlett[16] removed the ovaries from a woman in whom normal catamenial flow was replaced by periodic bleeding from the stomach, the operation being undertaken for other surgical indications. Two months after operation the vicarious bleeding recurred and continued at regular intervals of three or four weeks. This is the only case I have been able to find where ovariotomy was done in a case of vicarious menstruation. The case obviously belongs to the first group of the classification suggested above. In my Case I, operation seemed very promising since the hemorrhagic diathesis existed only at the menstrual periods, and yet the loss of blood was such as to cause a progressive anemia. In cases where vicarious menstruation is merely a manifestation of hemophilia, operation is to be undertaken with more timidity, and is of course not to be thought of in severe cases. It promises fairly certain relief from one source of hemorrhage, viz., uterine menstruation, and it offers a probability of relief from the periodic exacerbations of the hemophilic tendency.

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SENILE TREPIDANT ABASIA. REPORT OF CASES.

BY E. W. TAYLOR, M.D., BOSTON.

THE following cases are reported to draw attention to a peculiar disturbance of gait occurring in elderly people and presumably associated in some as yet inadequately explained way with general arterio-sclerosis:

CASE I. Mrs. C., eighty-three years old, was first seen Oct. 22, 1903. She gave the following history: Up to three years before she had considered herself well, except for the natural infirmities of advancing years. At that time she began to notice a disturbance in walking, particularly characterized by difficulty in starting. At times, when once started, she was able to progress fairly well, but the first movements necessary to taking a step were very much hindered, particularly when embarrassed by the presence of any one in the room. Going down a certain flight of stairs had become increasingly difficult and at the time of my first visit was impossible. The patient felt that she was growing worse.

Physical examination showed equal pupils with adequate light reaction, normal heart and no definite radial arterio-sclerosis so far as could be determined by ordinary methods of examination. The hand grasp on both sides was good; the reflexes of the arms lively, but not markedly different, with a probable slightly greater reaction on the left than on the right. The knee-jerks were both active, with a questionable Babinski sign on the left. No plantar reflex was obtained on the right. There was slightly greater difficulty in moving the left leg than the right. In general the patient appeared vigorous for one of her years and gave no indication of definite local or general disorder.

The point to which I desire to draw particular attention is her difficulty in locomotion. When standing and asked to take a step forward, it was practically impossible for her to do so by an ordinary act of the will. After much difficulty, hesitation and "muscular stammering," she was finally able to start the muscular movements necessary to walking, and still with much difficulty, taking short and uncertain steps, she was able to progress a certain distance with much show of effort. There was in this case no element of spasticity nor ataxia, nor could it in any sense be regarded as the gait of ordinary feebleness. The disturbance in locomotion, in other words, was out of all proportion to the other symptoms which she showed.

Certain exercises were prescribed which she followed out with faithfulness and with certain definite temporary improvement. When seen two weeks later she was distinctly better and was able to a certain extent to walk alone. At this time she complained of difficulty in writing very similar in character to that of walking. She was able to copy and write spontaneously correctly, but only after much effort.

She was seen again two years later, and during the interval had grown decidedly more feeble. She complained of spasmodic twitching of the legs at night sufficient to keep her awake. The reflexes were very active, still there was no ankle clonus, and the Babinski sign was altogether indefinite. As at the previous visits the left side showed slightly greater involvement than the right. The heart was arythmic and feeble; the

pulse 100; the radial artery stiff. She had practically given up the attempt to walk. Except for general enfeeblement, there was still no definite sign of intracranial or spinal disorder of a gross sort.

Case II. Mr. M., referred by Dr. J. E. Goldthwait, Nov. 9, 1906. The patient was seventy-five years old, without occupation. He had not worked for four years, and had had difficulty in walking for from one and-one half to two years. He complained that he "couldn't do as he used to, couldn't handle his limbs, which were like sticks." His legs, he said, gave out, and his ankles had swollen for six months past. He had, however, no subjective disorder of sensation; was able to sleep and eat well. He was slightly deaf through thickening of the drum membrane, but was not troubled either by headache or vertigo. He had noticed some shortness of breath and a sense of pressure across the chest, but there was no cough in the morning or at any other time. He thought that his left leg was more affected than his right, and complained of stubbing his toes through difficulty in lifting his feet. There was no definite pain in his legs, but occasionally he had sharp twinges running down his legs which he called rheumatism, from which he had suffered to a greater or less extent for some years past. He complained also of frequent micturition and lack of perfect control, especially when nervous. He had also been much annoyed by a tendency to emotionalism which manifested itself by crying again and again through the examination.

Physical examination was in general as follows: Pupils were equal, with good light and accommodative response; no disorder in the distribution of the cranial nerves; the strength of the arms was normal, with slight reflexes; they showed no motor or sensory disorder; pulse was 80; the heart sounds clear, with both the aortic and pulmonic second sounds sharply defined. There was a pseudo-Romberg sign; no general loss of sensation, and a doubtful disturbance in the muscular sensibility of the right great toe. Knee-jerks were within normal limits and essentially equal. There was no Achilles, clonus or Babinski sign. The normal plantar reflex was slightly developed. The strength of the legs was good. Examination of the urine showed no significant abnormality. Here again the striking peculiarity was the difficulty in locomotion without any apparently adequate underlying cause in the central nervous system. The same difficulty in starting and in progressing as described in the preceding case was found. The disproportion between the physical signs of disorder either in the motor or sensory tracts and the disturbance in locomotion was very striking.

Case III. Mr. D., approximately seventy-two years old, was seen Nov. 30, 1906, in consultation with Dr. D. W. Cheever. The patient for the most part had led a sedentary and studious life, and for some years past had shown the inroads of time by general failing in strength. Physically he was handicapped by a marked curvature of the spine, rigidity of the spinal column and of the bordering muscles. He had presumably had two slight hemiplegic attacks in preceding years, one on each side, from which he had in general recovered.

Physical examination showed a high degree of radial sclerosis with somewhat weak heart sounds. The knee-jerks were active, but there was no Babinski phenomenon and no evidence whatever justifying the supposition of a systemic degeneration of the pyramidal tracts. Although the patient in general presented many indications of advancing years, these were wholly out of proportion to the extraordinary disturbance of gait from which he suffered and which had virtually made him a prisoner in his house. There was no paralysis of the legs, and in general the muscular strength was sufficiently good. In spite of this fact there had been increasing difficulty in locomotion, characterized by extreme difficulty in starting, a tendency to shorten the steps more and more as progress was made, and the incapacity to make a movement forward of more than a few inches. The patient is obliged often to stop, after going a few yards, tired with the great amount of muscular effort which he has been called upon to make. This disturbance of gait is absolutely analogous to that observed in the previous cases, and like them is out of proportion to the general physical disability.

A fourth case comes to mind of a hospital patient, an elderly man, who presented the same characteristic disturbance. The exact records of this case are not at hand, but the vivid remembrance of the gait disturbance unquestionably justifies placing it in the same category as the cases described. He found the same difficulty in innervating the muscles necessary to start the movements of walking. If left to himself, he likewise found the greatest difficulty in progressing, although much assisted, as, in fact, all these cases were, by encouragement, explanation and method.

The foregoing striking disturbance of gait, as seen in these cases, is undoubtedly the condition described many years ago by Charcot, as senile trepidant abasia. This disturbance has been rather overlooked in the intervening years, no doubt from the fact that it comparatively rarely occurs in the characteristic form which is unmistakable. In a paper read before the American Neurological Association in June, 1906, Collins discussed the question of "A definite clinical variety of a cerebral arterio-sclerosis," [1] and drew a picture which he regards as pathognomonic of cerebral vascular disease, even although no external signs of arterio-sclerosis appear. With this picture those who have had much to do with elderly patients, as seen, for example, in almshouses, are familiar, though the clinical picture may not have been so clearly defined in their minds as that which Collins draws. Speaking of the disturbance of gait observed in his patients, Collins regards it as not unlike and possibly identical with the trepidant abasia of Charcot. In one place Collins describes the gait as follows: "When he (the patient) attempted to walk, the feet wide apart, shuffled along the floor a few inches at each stride, the strides sometimes fast, sometimes slow, while he made balancing movements with the hands." In this description no reference is made to the stammering character of the gait, the inability to start, and the curious ineffectual attempts to make progress. It is, however, probable that the gait to which Collins refers, represented rather a difference in degree than in kind from that which I have described in the foregoing cases and which Charcot, no doubt, had in mind when he gave to it the name "trepidant abasia." However, this may be the gait, when fully developed, is unique and unmistakable.

The best discussion of this type of disturbed locomotion which I have seen is given in a recent exhaustive paper by Karl Petrén, in which he deals with the relation between disturbance of gait in old age, produced by anatomical lesions

[1] Collins: Jour. Nerv. and Ment. Dis., 1906, xxxiii, 750.

and by functional disorders.[3] In this article, to which Collins also refers, Petrén accurately describes the gait disturbance to which I wish again to call attention. His general conclusions are that arterio-sclerosis lies at the basis of the disorder, but that it cannot be said that the disorder of gait is directly due to the changes in the blood vessels. On the other hand, hereditary influences and hysterical conditions are not to be seriously considered. The explanation of the disturbed locomotion, according to Petrén, is that the sclerosis of cerebral vessels brings about a mental state producing a subjective feeling of difficult locomotion which then has a pathogenetic effect in the production of a "Vorstellungskrankheit," in other words, the disturbance of gait is directly produced by a feeling of incapacity superinduced by structural, vascular changes.

However fanciful such an explanation may be, the type of disturbance certainly demands something more than a mere physical reason for its existence. Examination of the patients shows no sufficient physical incapacity to account for the gait. There is no paralysis; movements in other positions may be made with comparative ease and freedom; the individual muscular movements of walking may likewise be accomplished without difficulty, but the entire act of taking steps voluntarily results in the stammering tendency to which allusion has repeatedly been made. Explanation, encouragement and instruction, on the other hand, quickly produce results, and it is not difficult to induce such patients to walk with comparative ease through the use of such simple means. It is, therefore, apparent, as Petrén maintains, that we have in this interesting disturbance to deal with a mental defect, presumably dependent upon the senile changes of cerebral vessels which have, however, not led to sufficient injury to produce marked degeneration of the motor tracts.

At this time, when the general subject of arterio-sclerosis is demanding much attention, it is worth while to call attention to this trepidant abasia of the aged as illustrative not only of the infirmities which the vascular lesions themselves produce, but also as demonstrating the probable secondary effects upon the mind, which in turn lead to a lack of confidence, finally resulting in a practical incapacity for voluntary walking movements. The interest of these cases, therefore, lies not so much in the gait disturbance itself, as in the curious chain of events which finally brings it to pass. Much may, no doubt, be done in the way of treatment by perseverance, both on the part of patient and physician, in retraining the motor functions through an appeal to the will.

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TUBERCULOSIS IN LONDON.—Notwithstanding its fogs and supposedly unhealthful climate, London has a lower mortality from tuberculosis than many other European capitals. In 1904 it was only 166 per 100,000 inhabitants, as against 257.5 in Berlin, 254 in Milan, 256 in Madrid, 314 in Vienna, 383 in Paris, and 387 in Moscow.—*Med. Record.*

Medical Progress.

PROGRESS IN THE THEORY AND PRACTICE OF MEDICINE.

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BLOOD PRESSURE.

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WHEN the determination of arterial blood pressure first came into vogue as a common clinical procedure, there was a very great interest in this subject and many papers were published about it. As is often the case with a new method, extravagant claims were made as regards its value in diagnosis and treatment. Since then somewhat of a reaction has taken place and there has been a tendency on many sides to greatly discredit the value of blood pressure determinations. However, they have a distinct value, and during the year ending July, 1907, a number of contributions, to our knowledge, of blood pressure values in various conditions have appeared. The more important of these will be reviewed here.

In considering blood pressure it is important to distinguish minimal or diastolic blood pressure and maximal or systolic. Most of the early instruments were intended to record the latter and a large amount of our accumulated knowledge of blood pressure concerns only systolic pressure, whereas at present we know that, without a knowledge of both, we are unable to form a satisfactory judgment of the condition of the cardio-vascular system. G. A. Gibson [16] has admirably discussed the various methods of estimating blood pressure. For the systolic pressure we have the instruments of v. Basch and Potain which act by local obliteration of the pulse as judged by applying the finger or some recording apparatus immediately beyond the point of application of the instrument, the Riva-Rocci instrument or some of its modifications (Cook, Martin, Stanton, Janeway) with a cuff which encircles the arm and so obliterates the pulse, the apparatus of Gärtner which obliterates the pulsation in one of the fingers, and other forms.

For determining both systolic and diastolic pressure the instrument of Erlanger is the most accurate but it is expensive and rather bulky. Diastolic pressure can be determined approximately with the Riva-Rocci group of instruments by noting the point at which the mercury oscillations are greatest (Janeway), by taking pulse tracings of the wrist and noting the level below which no further increase in the size of the pulse wave occurs (Sahli), by palpating the pulse and determining the point at which it regains its maximum beat (Strasburger). The first method is only satisfactorily applicable to a fairly large pulse, the second requires much time and care, the third is in very general use in Germany and is accurate after practice within a limit of variation of 5 to 10 mm. of mercury. As pointed out by Hirschfelder,[21] one source of error in the Strasburger method lies in the lack of uniformity of pressure exerted by the palpating finger upon the radial artery, but this error can largely be eliminated by laying the tips of the index and middle fingers on the lower end of the radius just lateral from the artery and palpating the pulse with the balls instead of with the tips of the fingers. Under these conditions variations of pressure by the fingers are exerted against the bone and not against the artery and the main source of inaccuracy disappears. Bingels has constructed an instrument for determining diastolic pressure which is a combination of a mercury manometer and sphygmograph with a recording apparatus which by means of the break and make of an electric current as the mercury rises or falls marks every 10 mm. of change in pressure. This appears cumbersome and seems to be less efficient than the Erlanger apparatus.

The question naturally arises, Is any instrument necessary to determine blood pressure; is not the palpating finger sufficient? Gibson [16] expresses himself very strongly on this point as follows: "We sometimes, even in this new country (America), hear it said by distinguished teachers that the educated finger is the best means of judging the arterial pressure; to the initiated such a statement is grotesque in the extreme. Undoubtedly the sense of touch, aided by a long experience, is of considerable value, and it is the duty of each of us to train the fingers to the best of our ability; yet the man who will gravely say that he is able to gauge the blood pressure by means of his fingers is quite as foolish as another man would be who gravely stated that he was able to take accurate temperature readings by applying his hand to the surface of the patient. During the last thirty years my efforts in training myself to assess blood pressure by the sense of touch have taught how extremely fallacious such a method must always be. . . . Those teachers who still oppose the use of our modern instruments of research in the investigation of blood pressure are on the same level as those who contemn the employment of such instruments as the ophthalmoscope."

Schilling [28] as the result of more than 1,000 observations on 350 individuals states that often the finger is deceived and that instrumental measuring of the blood pressure is necessary for any degree of accuracy. This has been the experience, I am sure, of almost all who have used some one of the instruments for the determination of the blood pressure and the discrepancy is frequently much, so that a patient judged by the finger to have a moderately high blood tension is found to have a very high tension. As an example of this there were recently at the Carney Hospital

two patients in nearby beds, both nephritic cases. To the palpating finger of several observers there appeared to be no very great difference in blood pressure. Yet as determined by the Erlanger sphygmomanometer the one had a systolic pressure of 130 and diastolic of 90, the other a systolic of 220 and diastolic of 130. In each considerable edema was present and of about equal mount.

However, not all would agree with Gibson, as the following quotation from Broadbent [6] indicates. "It is by the radial pulse that we estimate clinically the pressure in the arterial side of the circulation, and it affords the educated finger information which, intelligently interpreted, goes farther and is more valuable than the instrumental registration of the blood pressure." A similar view is taken by Steven [33] who says, "But for the practical physician, in the investigation of blood pressure, the trained finger must be the ultimate appeal and it is, I hold, sufficient. It can give information of a kind and of a value in practice as a whole that no instrument, however ingenious, can supply."

To read between the lines of these expressed views of Gibson, Broadbent and Steven it would seem to me that they are talking in reality about slightly different things. Gibson and the adherents of blood pressure machines refer to the estimation of blood pressure alone, while the other group have in mind a number of qualities of the pulse determinable by the palpating finger and which give valuable information as to the condition of the cardiovascular system. No one would claim it advisable merely to register the blood pressure and not feel the pulse. The former gives a measured factor which in conjunction with other observed characteristics of the pulse is of great value. The blood pressure factor cannot be accurately quantitated except by means of instruments. To know the systolic and diastolic pressure in many cases is of great aid in diagnosis and prognosis.

As is now well known the width of cuff used with the Riva-Rocci form of apparatus is a source of variation in the results, as the narrow cuff gives high readings. Schilling [28] and a number of others have clearly demonstrated this. Schilling has further shown that the decrease in the height of a blood pressure reading decreases as the cuff is made wider until a width of 12 cm. is reached, beyond which there is practically no further change. With a cuff of that width the estimated systolic blood pressure closely approximates the actual intra-arterial systolic pressure. Another source of variation is the size of the patient's arm. Schilling has shown this by making readings on both arms of patients in whom one arm was larger than the other; the larger arm gives higher blood pressure values.

It is also important when making successive estimations on the same individual to have identical conditions each time since the ingestion of food, physical and mental exertion, and posture, influence blood pressure. There appears also to be a diurnal fluctuation. Change in posture effects especially the diastolic pressure.

Dawson [11] emphasizes the importance of qualifying the term "blood pressure" by the words systolic or diastolic, whichever is meant, and he insists on the necessity of determining both in order to understand the condition of the cardiovascular mechanism. The result of the neglect of this is illustrated experimentally in an animal by opening the abdomen, handling the viscera and allowing the peritoneal layers partially to dry. Under these conditions severe shock is produced. Yet systolic blood pressure falls but slightly. Diastolic pressure, on the other hand, rises and there is a considerable decrease in pulse pressure (the difference between systolic and diastolic pressures). The importance of knowing both systolic and diastolic pressures as determined in the brachial artery of man by means of sphygmomanometric methods is, according to Dawson, that from them we obtain the pulse pressure which, multiplied by the pulse rate, gives the systolic output per minute and is a measure of cardiac activity, since the pressures so measured in the brachial artery are equal to the lateral pressures in the aorta. This assumes that the pressure measured in the brachial artery is the end, not the lateral pressure. Bing,[4] on the other hand, maintains that the lateral pressure in the brachial is measured since, were it the end pressure and so the lateral pressure in the aorta, the pressure in the two arms would be equal, which is often not the case. Bing by a special apparatus shows that the pressure obtained depends in part on the state of contraction of the vessels of the arm and these changes do not necessarily represent changes in aortic pressure. So we are not dealing with the absolute systolic pressure according to Bing when we measure the brachial pressure by a sphygmomanometer. However, the values certainly are closely approximate and may be used as a measure of cardiac output.

H. J. Starling [32] with the Riva-Rocci instrument has studied the systolic pressure in cardiac cases. In many he finds hypertension, in none a pressure below normal. This is again evidence of the importance of the estimation of diastolic pressure, for without it we do not know the pulse pressure which is an index of the cardiac condition. According to Fellner [15] the particular value of pulse pressure determinations in cardiac cases is in connection with an estimation of the results of digitalis therapy, for a rise in pulse pressure indicates good effects from the drug, whether systolic pressure rises or falls. In aortic insufficiency, however, the variations in pulse pressure are of slight prognostic importance since many disturbing factors enter, but a high pulse pressure is of diagnostic value. In arteriosclerosis the results are very confusing, and pulse pressure determinations are of comparatively little value.

Blood pressure estimations, according to Rumpf,[26] may aid in the diagnosis of traumatic neurosis, since in such cases with tender points pressure over them leads to a rise or fall in systolic pressure along with other phenomena as acceleration of cardiac activity, decrease in size of

pulse, irregularity of pulse and cyanosis of the face. These all vanish shortly after cessation of the stimulation. In neurasthenics organic cardiovascular lesions can be excluded with great probability if, after a graded amount of work, the changes in blood pressure and cardiac output remain within normal limits (Stursberg [36]). This may help in distinguishing nervous and organic cardiac disturbances. Bing [4] finds that the symptoms of hypertension, variability and liability of blood pressure and pulse rate, and abnormal activity of the trigeminus reflex (blood pressure changes following the inhalation of weak acetic acid vapor) singly or better in combination are a frequent finding and in a sense of diagnostic value in vasomotor neuroses, especially those of traumatic origin. However, this group of cases usually has other evidence of their nature such as tachycardia, dermographia, etc. In hysterical, neurasthenic and psychesthenic patients without vasomotor or cardiac symptoms all these changes are apt to lie within the high limits of the normal.

In Cheyne-Stokes's respiration Eyster,[14] by means of blood pressure studies, has been able to subdivide the patients into two groups. In one there is a rise of blood pressure during the period of respiratory activity and a fall during apnea; in the other the reverse conditions are true. In each there is a slowing of the pulse with the fall in blood pressure, so that in the first group the slow pulse comes with apnea, while in the second it comes with respiratory activity. The first group is associated with increased intracranial pressure, the second with cardiac and renal disease. These changes in blood pressure are not due solely to the changes in respiratory activity, since different curves are obtained when the Cheyne-Stokes rhythm is imitated by the normal individual.

It has been currently believed that the blood pressure is greatly increased in those working under increased atmospheric pressure. It was supposed that the superficial vessels were compressed and contracted and that there was a superficial anemia with corresponding engorgement of the large trunks of the internal viscera. This was considered to be a factor in some of the disabilities of compressed air workers. Brooks [8] has investigated the systolic and diastolic pressures with the Janeway sphygmomanometer in 75 men working under compressed air (31 lbs. above atmospheric pressure) in the New York tunnels. Pressures were measured before entering, after one to two and one-half hours' work in the compressed air and again after leaving. He obtained the following results:

	mm. of Hg.
Average systolic pressure before entrance,	116.19
" diastolic " " "	91.08
" systolic " in compressed air,	128. 88
" diastolic " " " "	87.68
" systolic " after exit,	112. 76
" diastolic " " "	90.78

These changes are all within the limit of change produced by work under normal atmospheric pressure. As a corollary to these results Brooks states his belief that patients having cardiovascular disease should do as well at high altitudes as at low and that moderate renal or circulatory disease should not disbar men from working under moderate air pressure.

Systolic pressure during pregnancy and the puerperium has been studied by Vogeler.[36] During pregnancy he considers 100 to 150 mm. of Hg. normal. During labor the pressure rises, but after labor any departure from these limits is abnormal. Hypotension (below 90) is significant in estimating the importance of profuse or long-continued hemorrhage. Moderate hypertension (150–180) is not incompatible with the completion of a full-term pregnancy, but marked hypertension (over 180) is always a cause of grave anxiety lest eclampsia supervene. Vogeler believes that persistent hypertension with increasing edema and the development of cerebral symptoms is extremely dangerous and that interference with pregnancy would be the better policy.

Sheppard [30] considers blood pressure in typhoidal perforation and concludes that a rise is not so common as Crile's figures would indicate, but in conjunction with other signs is a valuable aid in diagnosis.

In Addison's disease the blood pressure is very low, 75 to 85 mm. of Hg. in a case of Short.[31] This author believes the pigmentation is also a result of the low blood pressure, for with the vascular relaxation there is an increased function of the pigment forming cells. Treatment in his case with adrenalin and digitalis gave good results for a period of some months, though the case eventually relapsed and died of the disease.

Since carbondioxide baths usually raise the blood pressure in cardiac cases as one form of their good effects, the question has been raised whether or not they are contraindicated in cases of high blood pressure. In two papers, Groedel and Groedel,[17] and Baur,[1] show that high blood pressure is no contra-indication if the baths are used with caution, since in most of these cases there is a very slight or no rise, and in many an actual fall. Bing [4] utters a note of warning against the use of blood pressure determinations in the estimation of the value of hydrotherapeutic procedures, since as shown by him the effect may be to cause changes in the peripheral vessels which influence the readings without changing the actual pressure. So minor changes in blood pressure readings may be of no significance.

Low blood pressures have usually been found in pulmonary tuberculosis. Reitter [27] has investigated the systolic pressure by means of the Gärtner tonometer in renal tuberculosis and finds that here the tension is usually below normal when there is no true nephritis or cardiac hypertrophy. Cases of renal calculus with pyelitis, on the other hand, usually show a normal or high pressure, so hypotension may be said to be suggestive at least of renal tuberculosis as against renal calculus. The cause of the lowered pressure of tuberculosis has been attributed by some to the action of tuberculin. Bauer,[2] however, fails to find any low tension produced in man or rabbits

by injections of Koch's old tuberculin, except when the reaction was positive. Then there was a slight fall due rather to the reaction than to any specific blood pressure lowering substance in the tuberculin.

In chronic Bright's disease Elliott [12] finds a considerable hypertension as contrasted to cases of arterio-sclerosis with normal or slightly elevated blood pressure. In experimental uranium nitrate nephritis in rabbits there is a distinct rise of blood pressure (Brodzki [7]) showing that in some way the renal lesion is responsible for the rise. Since the systolic pressure often remains high in chronic nephritis both under conditions of improvement and deterioration in the patient's condition, it is of importance to know the pulse pressure, for a rise in that is of good prognostic omen, while a fall is of bad omen indicating an increased renal insufficiency (Fellner [15]).

Capps [9] has studied the changes in systolic blood pressure following the withdrawal of pleural and peritoneal fluid. With each there is a moderate fall of pressure followed by a gradual rise. The degree of fall depends rather on the rapidity of withdrawal than on the amount of fluid withdrawn.

The average systolic blood pressure in general paresis Walton [37] finds high as a rule. This is apt to be the result of accompanying cardiac and renal conditions. Excluding these cases, pressure is slightly below normal. The blood pressure has no diagnostic importance in general paresis.

The following quotation from Janeway [22] is a suitable introduction to any discussion of the therapy of high blood pressure. Janeway says, "The height of the blood pressure gives no indication whatever for treatment except along preventive lines. Hypertension is no more to be attacked therapeutically than is a heart murmur. Only those symptoms which point unmistakably to inadequate maintenance of the circulation or to sudden threatening danger give us the signal to interfere." The importance of this view cannot be overestimated. Janeway divides treatment into three divisions, (a) preventive, (b) adjuvant and (c) emergent. Under preventive he suggests rest, milk diet, avoidance of strains, excitement and excessive use of tobacco and alcohol. Digitalis is a valuable adjuvant and should be used at the onset of cardiac insufficiency, and the indications for its use are the same whatever the blood pressure readings. As emergent treatment, Janeway employs nitroglycerin and the nitrites, bleeding or light chloroform narcosis. In severe abdominal pain and headache associated with hypertension, morphine is often efficacious.

Oliver [25] employs somewhat similar treatment. He emphasizes a decrease in the bulk of food and a decrease in the amount of meat eaten. A reduced salt diet is often of use. A milk-vegetable diet is for this reason employed, since not only the sodium chloride used as a condiment is to be reduced but also food with a low salt content must be given. Oliver further recommends the D'Arsonval electric current and electric light baths. Medicinally he uses a morning saline in hot water combined with an intestinal antiseptic as benzolnaphthol, salol, etc., and gives thyroid extract, potassium citrate, the nitrites, iodides, hippurates or benzoates.

Steven [33] divides high pressure cases into two groups, (1) temporary and recurrent form and (2) continuous form. The latter is practically always associated with chronic renal disease and it is the renal condition that is to be treated. The former group is usually the result of errors or excess in diet or wine, constipation or nervous excitement. Treatment consists in removing the cause and a judicious use of aperients and the nitrites.

The effect of amyl nitrite inhalations on the blood pressure of man has been studied by Hewlett.[19] He finds a primary fall in systolic pressure followed quickly by a rise until the pressure passes above the original to fall again to normal in five or six minutes after the inhalation. The diastolic pressure acts similarly but to a less marked degree. With these changes there is an increased heart rate so that the result is to cause the heart to pump more blood and give a more rapid flow through the body under normal conditions. With nitroglycerin the effect on blood pressures was usually slight and inconstant.

Cook [10] points out that many patients still go to operation with the old routine of a cursory auscultation for cardiac murmurs and urine analysis for albumin and sugar, and during operation the general condition of the patient receives rather scant attention by the etherizer, who is usually an inexperienced man. Blood pressure determinations during and before operation, Cook thinks, furnish one of the best means of estimating the cardiovascular condition and determining the institution of appropriate treatment. Cases with high tension stand the added strain of operation as a rule poorly and tend to cardiac dilatation, excessive hemorrhage, vessel rupture or renal affections. If the hypertension receives appropriate preliminary treatment these dangers are minimized. For this Cook prefers sodium nitrite in ½ or 1-gr. tablets. During operation the Trendelenburg position should be avoided, care taken to prevent any asphyxia with the anesthetic, and not more gauze than is absolutely necessary should be crowded into the subdiaphragmatic region. Low tension cases as a rule stand operation well if proper precautions against shock and hemorrhage are taken, but after operation they seem to lack resistance to infection of all kinds. With them the preliminary fasting and purging should be less stringent and nourishing food should be given early. Strychnia in repeated doses of one-fortieth grain for the adult is apparently most beneficial. Blood pressure determinations after operation are of great value as aids in the diagnosis of hemorrhage, shock, infection and cardiac dilatation. In the latter the usual treatment is directed towards raising the tension, when often it is the vasodilators that are needed, not the Trendelenburg position,

abdominal pressure, adrenalin, caffeine and saline transfusion.

According to Hare [18] the physician very often stimulates the tired heart when attention to the peripheral vessels is needed. When there is hypotension atropine, adrenalin and digitalis are indicated to prevent the heart from wasting its energy in pumping blood into a greatly relaxed peripheral vascular channel. On the other hand, with hypertension other treatment is indicated. Hare divides hypertension cases into three groups: (1) those in which persistently high tension is the result of spasm due to prolonged nervous stress combined with certain abuses as to habits of life, food and drink; (2) those in which tension is high because in addition to spasm there is gradually developing, or has already developed, fibroid changes in the vessels; (3) cases in which, after a prolonged period of high tension, there more or less suddenly develops persistent low tension. In (1) and (2) rest in bed, with massage and the nitrites is essential. In (3) rest in bed is needed but vascular stimulants are required. In all the iodides are valuable. If the high tension is the result of spasm, nitroglycerin will do good, otherwise not. This latter fact is frequently not borne in mind by the physician.

Venous blood pressure has been studied extensively by Sewall.[29] For measuring venous pressure he employs a small spring manometer. The arm of the observed individual is held at the level of the angle formed by the top of the fifth left cartilage and the sternum in order to remove gravity effects. A superficial vein is selected with a firm underlying tissue. The spring manometer is held freely in the hand, the pad is pressed down on the vein which is then wiped empty by a stroke of the finger and the pressure is relaxed on the manometer until the blood begins again to flow under the pad at the end of the instrument. The piston is then pressed against the side of its bed with the finger, the instrument is lifted and the pressure read off.

By this means Sewall [29] has made many observations on venous pressure. He finds that local and general exercise raise venous pressure; cold lowers and heat raises it; and there is a respiratory variation corresponding with the respiratory changes in arterial blood pressure. In cases with cardiovascular disease arterial and venous pressure may bear varying relations to each other as follows: (a) the ratio of arterial to venous pressure may be increased; (b) the ratio may be decreased; (c) the ratio remains unchanged but both are abnormally high, and (d) the ratio remains unchanged but both are abnormally low. As yet no great diagnostic importance can be attached to these changes.

At an inquest held in an English city, according to the *Medical Record*, it was stated that there were signs of lead poisoning in the system of a man who had been a heavy drinker. The doctor explained that it was probably due to his having been an early-morning customer at public houses, as a consequence of which he would be served with the beer which had stood in lead pipes all night.

Reports of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

TWENTY-FIRST ANNUAL MEETING.
HELD AT WASHINGTON, D. C., MAY 7 TO 9, 1907.

(Continued from No. 6, p. 192.)

WEDNESDAY, MAY 8, SECOND DAY.

DRAINAGE TUBE FOR USE AFTER PERINEAL PROSTATECTOMY.

DR. FRANCIS R. HAGNER, of Washington, D. C., presented a metallic drainage tube which he had devised for use after perineal prostatectomy. Rubber tubes often became plugged, necessitating removal. Dr. Hagner's tube was something like the Kemp rectal tube, except that it had four openings. It was made of silver, and was provided with a collar which was stitched to the wound. The tube could be removed, leaving the collar in place, simply by loosening a screw. He had also devised a metallic drainage tube, with a single current, for use after external urethrotomy.

PRESENTATION OF APPLIANCES TO FACILITATE THE MAJOR GENITO-URINARY OPERATIONS.

These, presented by DR. F. TILDEN BROWN, of New York, included a portable folding board, leg rests, a modified clover's crutch, an apparatus for raising the loin during kidney operations, and cushions for the last apparatus.

PRESENTATION OF A NEW MODEL OF THE AUTHOR'S CYSTOSCOPE.

DR. BROWN presented a new model of his catheterizing cystoscope, and also a modification of the Otis observation cystoscope.

OINTMENT DEPOSITOR.

DR. HUGH H. YOUNG, of Baltimore, presented an instrument which he used in making applications of ointments to the posterior urethra. He had found during the past year that the ointment treatment of chronic urethritis, irritability of the prostatic urethra, etc., was very efficacious.

PUS TUBES IN THE MALE.

DR. WILLIAM T. BELFIELD, of Chicago, read this paper. He reviewed the anatomy of the posterior urethra, ejacular ducts, seminal vesicals and vasa deferentia. Prostatic concretions were normal features, because found in every adult male over thirty-five years of age. In later life they were increased with lime salts, and were apt to set up suppuration in the prostatic follicles. The spontaneous epididymitis so common in these patients seemed usually attributable to these concretions. The utricle had a distinct clinical importance, though ignored in all standard works. Only three references to disease of the utricle could be found in the literature. Infection and abscess were frequent. A typical gonorrheal abscess of the utricle was recently seen by himself and Dr. Schmidt, which was opened with the finger-nail, through the rectum. Abscess of the utricle should be opened through the rectum; abscess of the prostate through the perineum. The ejaculatory ducts might open into the utricle. He found four such cases in human subjects. This was natural in some of the lower animals, as the rodents. The gonococcus was rarely found in the seminal tube except during the first few months of a gonorrhea. While the gonococcus reached the posterior urethra in

75% of cases, it invaded the epididymis in only 10% of cases, or 5% of the epididymes. The colon bacillus was a rare inhabitant of the urethra, but a frequent invader of the vesicles. Pus infections of the vesicle, ampulla and epididymis were in large measure independent of the gonococcus. Dr. Belfield then described his operation of opening the vas and applying medication to the seminal tube and vesicle. He had now done the operation 97 times, in 76 cases, both vasa having been injected in 21 cases. Typical cases were reported.

DR. HUGH H. YOUNG, of Baltimore, thought the pathology and treatment of diseases of the ampullæ of the vasa deferentia had received entirely too little attention, and that a great many cases had been put down as chronic vesiculitis which were really chronic ampullitis, if that term might be used. He had used injections of iodoformized oil into the vas in cases of genital tuberculosis, after excising the epididymis, and had obtained good results.

DR. EDWARD MARTIN, of Philadelphia, had never been able to tell by clinical examination whether the greatest inflammation was in the ampulla or the seminal vesicle. He had always hesitated to do the more extensive operation of opening and draining the vesicles, and thought Dr. Belfield had suggested a very good way of relieving the retention. He asked if Dr. Belfield had found any difficulty in entering the vas and keeping the opening patulous; whether he had had any cases of descending infection from the site of operation, and whether he had found cases of obliteration of the vas above his point of opening and between that and the principal site of infection, the base of the bladder. He also asked as to the ultimate disposition of the opening in the vas, whether it was sutured or not and whether obstruction tended to occur afterwards.

DR. FRANCIS R. HAGNER, of Washington, D. C., said that in operating on a case of acute epididymitis together with an acute vesiculitis he had made one injection of argyrol into the vas with marked improvement of the vesiculitis.

DR. LOUIS E. SCHMIDT, of Chicago, had had experience in over 20 cases, in many of which the symptoms suggested a prostatic trouble. He opened the vas, inserted a blunt needle, sewed it in place, and left it in for from one to three weeks, depending on the improvement. Injections of 10 to 20% argyrol were made daily, at first injecting 5 to 10 ccm., later 20 to 30 ccm. at a time. In three cases treated by this method, he had observed them for two or three years and there had been no return of their trouble so far.

DR. E. E. KING, of Toronto, said he had never had the courage to adopt this method of treatment for fear that he might set up a worse condition than the one he was trying to cure. He had used the opsonic treatment in several cases, with encouraging results.

DR. BELFIELD said he had given the subject of stricture of the vas considerable attention. He had never used bougies, but had used silk worm gut, horse hair and brass wire. In only 3 cases had there been a distinct obstruction in the pelvic portion of the vas. Infection had extended downward into the epididymis in one case. The opening in the vas was easily controlled if the operation was done properly. He divided the vas transversely, passed his sutures, and left them loose until he was ready to restore the lumen of the vas, when the threads were simply tightened, drawing the divided ends of the vas together.

THE DIAGNOSIS OF HYPERTROPHY, CANCER AND INFLAMMATORY INDURATION OF THE PROSTATE, AND THE APPLICATION OF PERINEAL PROSTATECTOMY TO THESE CONDITIONS.

DR. HUGH H. YOUNG, of Baltimore, said the question of the operative treatment of carcinoma of the prostate was one of the most important in prostatic surgery. To do anything in the way of a radical cure, an early diagnosis was necessary. During the past year a great many more cases had come into his practice, and he had now carefully tabulated 75 cases. It was interesting to know that none of these patients was under fifty and only one over eighty years of age. The age limits in hypertrophy were different, a good many of those being under fifty and over eighty. The majority of cases of carcinoma were found between sixty and sixty-nine years of age. Nineteen cases had no symptoms longer than one year, 13 between one and two years, 21 between two and three years, 9 between three and four years, 6 between four and five years, 3 over five years, and in 3 cases over ten years. Forty-five cases began with frequency of urination, 28 with difficulty in urination, two with sudden complete retention and one with incontinence. Pain was a much less frequent symptom. Hematuria was the initial symptom in one case. In 72 of the 75 cases the prostate on examination was of a stony hardness. In no case was there no induration at all. In 38 cases the surface was rough or nodular, in 37 the prostate was smooth. The seminal vesicles were involved in 43 cases. During the course of the disease the symptoms differed little from those of hypertrophy. Pain and hematuria were just as frequent, or a little more so, in hypertrophy, and the urinary symptoms were very much the same. In prostatitis the symptoms were distinctly different, there being more sexual disturbance, as loss of sexual power, early ejaculation during intercourse, and often a peculiar burning pain in the deep urethra. A good many showed obstruction of urination, this symptom appearing in 34 out of a series of 358 cases. Eighteen required operation, of which 5 were cases of complete retention. Contraction of the bladder and irritability of the posterior urethra were more frequent in prostatitis. To be of benefit in carcinoma, the diagnosis should be made early. Dr. Young said he was not able to make an early diagnosis in a single case in which a diagnosis of carcinoma was made. Only one of these cases recovered, the others dying of recurrence. In prostatitis the vesicles were involved, and the surface of the prostate was usually more irregular than in carcinoma. In cases of chronic prostatitis in elderly men cystoscopy showed a slight median bar, but never the condition seen in prostatic hypertrophy. In carcinoma the seminal vesicles were involved in the later stages. Cystoscopy in carcinoma showed that the disease rarely reached the bladder directly, but as a rule traveled up behind the prostate into the region of the ampullæ and seminal vesicles. Only in two or three of the cases had the disease involved the bladder from the prostate. In carcinoma there was a marked thickening of the suburethral tissue of the prostate, it was difficult to pass an instrument, on account of stricture of the anterior part of the prostatic urethra, and there was a thickening below the trigone. A highly indurated condition of the prostate in a man over fifty ought to make one suspicious of carcinoma. If on cystoscopy one found a nodular median lobe, and possibly lateral lobes projecting into the bladder, and if on palpating the prostatic urethra with the instrument in it one found no thickening of the front portion of the prostatic urethra, it was probably not carcinoma. If there was stricture in the prostatic urethra, an induration and thickening beneath the prostatic urethra, and a stony hardness of the prostate on rectal examination, one was safe in making a diagnosis of carcinoma. On operation, if the operator was at all suspicious of carcinoma, a small piece should be removed, frozen and examined before proceeding with the operation. If it was cancerous, a complete perineal prostatectomy was done. He was

of the opinion that the prospects of being able to effect a radical cure were better than in carcinoma of the breast, the prostate being more encapsulated than the breast, and the metastases later in their appearance. Radical cure was possible only by an early diagnosis, and in making an early diagnosis, every indurated prostate ought to be suspected. Dr. Young had operated on 22 cases of chronic prostatitis. They were patients distinctly unfavorable, who suffered with marked irritability of the posterior urethra and a certain amount of obstruction, generally associated with a contracture of the badder and hypertrophy of the bladder wall. Several of the cases had had complete retention of urine. Two young men under thirty had to use a catheter, one for twelve years. Five of the cases were operated on by the Bottini operation, with fairly good success, but it seemed if an operation was to be done perineal prostatectomy was much safer than the Bottini operation. It was better to do a cutting operation and remove a good deal of the prostate and leave good drainage for the rest. The cases operated on had had fine results. One of them had since become the father of a boy, and in others sexual powers had been interfered with only a few months. If the operation was carefully done, the power of sexual intercourse and ejaculation would not be interfered with. In one of the cases the incision was carried a little farther and the seminal vesicles drained.

DR. WILLIAM T. BELFIELD, of Chicago, said he had noted what did not seem to be present in Dr. Young's cases of carcinoma of the prostate, early and extensive metastases. The value of any method of treatment would depend on the ultimate results, and those would depend largely on the metastases. He had yet to be convinced that it was ever necessary to operate for chronic prostatitis.

DR. L. BOLTON BANGS, of New York, said primary carcinoma of the prostate was not so rare as it used to be thought to be. Notwithstanding all that Dr. Young had said, there were many cases where it was absolutely impossible to make an early diagnosis. So much depended on the refinement of touch, the temperament of the individual, the determination of relative firmness or hardness, etc. In his experience, the initial symptom was not necessarily hemorrhage.

DR. ARTHUR T. CABOT, of Boston, had found nodularity more often in his cases than Dr. Young had described. He had found tightness of the prostatic urethra a characteristic symptom, and he had also met with a symptom which he had seen mentioned somewhere, and that was severe pain on withdrawing a catheter. Hemorrhage had not been an early symptom in his experience. He agreed with Dr. Young that carcinoma of the prostate remained a local disease longer than in many other locations. He had operated in two cases of chronic prostatitis, but they were very severe cases and in young men. He would try Dr. Belfield's plan.

DR. C. L. GIBSON, of New York, had used Dr. Young's technique in two cases of carcinoma of the prostate, and said he wished to contribute a word as to its efficiency. It was not so formidable an operation as it appeared from the photographs. The only difficulty was the separation from the rectum, which had to be dissected up carefully. He had never used Dr. Young's method of operating for prostatitis, but he had used Alexander's method of doing an external urethrotomy and opening and draining the lateral lobes.

DR. LOUIS E. SCHMIDT, of Chicago, had operated in 3 cases of chronic prostatitis, in which the predominant symptom was pain. A year after the operation the pain was just as bad as before. The urinary symptoms were somewhat improved.

DR. H. M. CHRISTIAN, of Philadelphia, thought the stony hardness of the prostate a most important symptom. He agreed with Dr. Cabot as to nodularity of the prostate. He had noted sciatic pain in some of his cases. He thought the method of palpating the prostatic urethra with the cystoscope in the bladder was the most convincing and most important point. He was inclined to agree with Dr. Belfield that we had hardly reached the point where we were prepared to operate in chronic prostatitis in early adult life.

DR. EDWARD MARTIN, of Philadelphia, said nothing had been said concerning the associated spasm of the vesical sphincter in chronic prostatitis, which could be relieved by over-dilatation. For this purpose he had had an instrument made by which the sphincter could be stretched up to 90 French. Bony metastases might occur before any symptoms of prostatic carcinoma appeared.

DR. JOHN VAN DER POEL, of New York, mentioned two cases of carcinoma of the prostate he had seen recently. One of them was mistaken for sarcoma, on account of its regularity. Metastasis could not be made out in either case. Unfortunately, neither case would permit an operation. He said he would be loth to operate for chronic prostatitis. In none of his cases of prostatectomy had he been able to preserve the sexual function.

DR. EDWARD L. KEYES, JR., said he and his father had been doing a modified Bottini operation in cases of contracture of the neck of the bladder, with fairly good results. It was well worth while to consider the advantage of the instrument mentioned by Dr. Martin for stretching the neck of the bladder in those cases, and thought such a procedure was indicated when in those cases there was residual urine. He asked whether Dr. Young considered that prostatic hypertrophy did really begin to show itself clinically in young persons.

DR. HARVEY G. MUDD, of St. Louis, mentioned the case of an old man past eighty years of age, who had a large, smooth, soft prostate. On doing perineal prostatectomy when the capsule was broken through it was found that they were dealing with a large soft cancer of the prostate.

DR. YOUNG said in closing that he wanted it understood that he did not recommend operation as a routine treatment of chronic prostatitis. He had only operated in 4 cases of chronic prostatisis without obstruction out of about 1,000 cases.

NOTE ON PROSTATECTOMY.

DR. ARTHUR T. CABOT, of Boston, said he wished to speak of the causes which he had seen for failure in prostatectomy. He had had an opportunity to observe the results from both perineal and suprapubic operations. Sometimes portions or flaps of the urethral mucous membrane were left, which later obstructed the mouth of the urethra. This was more apt to follow an operation done from above. In badly infected cases it was advisable to treat the bladder some time before attempting the operation on the prostate.

DR. HUGH H. YOUNG, of Baltimore, had seen cases in which a flap had obstructed the urethra after prostatectomy, and he thought in these cases it was advisable to excise the capsule along with the lobe, using a cautery to prevent hemorrhage. He had never had to remove a prostate piecemeal, and he thought this was because he made the lateral incisions very deep.

DR. L. BOLTON BANGS, of New York, could not agree with Dr. Young that it was always possible to enucleate the prostate and not remove it piece by piece. There were also cases in which it was impossible to remove the prostate through the perineum.

DR. FRANCIS R. HAGNER, of Washington, D. C.,

said his experience agreed with that of Dr. Bangs as to the impossibility of enucleating certain prostates, even when the lateral incisions were made deeply.

DR. JOHN H. CUNNINGHAM, of BOSTON, had done the rapid median operation in 24 cases, in 2 of which there had been obstruction of urination afterwards, due to the fact that sounds had not been passed subsequent to the operation. It was important to keep these cases under observation and pass sounds for a time.

DR. JOHN VAN DER POEL, of New York, mentioned a case where it had been impossible to enucleate the middle lobe, on account of its pedunculated condition, and in order to get it out it was necessary to remove the mucous membrane with it.

DR. HUGH H. YOUNG, of Baltimore, thought that where the mucous membrane was preserved it was never necessary to pass sounds after a perineal prostatectomy. He had met with only one case, in a series of 200 cases, in which there was stricture after operation, and that was in an old man who had a very fibrous median bar, and the urethra was incised in that case.

DR. CABOT said he had two or three times removed several of these vesical outgrowths into the bladder. In one case he had removed four one after another. They were easily hooked out with the scoop used in removing stones. He always explored the vesical neck with his finger before putting in drainage after operation.

(To be continued.)

Book Reviews.

Text-Book of Psychiatry. A psychological study of insanity for practitioners and students. By DR. E. MENDEL, A. O. Professor in the University of Berlin. Authorized translation. Edited and enlarged by WILLIAM C. KRAUSS, M.D., Buffalo, N. Y., President Board of Managers, Buffalo State Hospital for Insane; Medical Superintendent, Providence Retreat for Insane; etc. Philadelphia: F. A. Davis Co.

This, the first English version so far as we are aware of any of Professor Mendel's writings on insanity, is a text-book — rightly called a psychological study of insanity — for students attending clinics and young physicians who are subject to examinations. It is seldom that a book of its size — 300 pages — covers as this does such a wide range of subject and detail without sacrificing clearness and proportion to conciseness. In the process of condensation not only are all subjects that are likely to be of practical value to the student adequately treated, but a surprising amount of matter is included that is principally of interest to the experienced alienist. A helpful feature is the frequent use of example and illustration in the exposition of the subject. Another is the employment of apt terms to express in abbreviated form various manifestations or lines of morbid thought. Equally useful is the assembling of the different varieties or groups of mental disease in which a given condition may occur, — a practice often overlooked in text-books on insanity. These and other features together with the author's disease-pictures which are sufficiently descriptive for the purpose of the work should give the student a good working knowledge of the subject and a sound basis for its further study. As most students and young physicians will have to deal with the emergencies and other temporary conditions of insanity it perhaps matters little that the author restricts dementia precox to a rare variety which in point of frequency (2% to 3% of all cases of insanity observed) approaches the original hebephrenia of Hecker. The special student of psychiatry, however, will be more confused than ever in interpreting the nature of dementia precox to find such a high authority inculcating a conception of this disease which classes as separate and distinct "forms" or symptom-groups several conditions which, according to the modern doctrines of psychiatry, are regarded simply as episodes or phases in a chronic dementing process of not uncommon frequency.

The supplement contains a "guide for the examination of one mentally diseased and for the preparation of the clinical history" which is excellent. It is unique in our language for its comprehensiveness and minuteness of detail. For the Prussian procedures relating to the insane the editor has substituted the New York state laws and commitment form.

With the exception of an occasional crude or ambiguous expression the translation is a satisfactory one and the editor is to be congratulated on so promptly giving to English readers and workers so useful a book for clinical instruction from such an authoritative source.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vols. III and IV. Chicago: W. T. Keener & Co. 1907.

Volume III of this encyclopedia carries the subject matter practically through the letters E, F and G, and completes nearly one-third of the entire work. In this volume there are more than one hundred articles of less than one thousand words but of more than ten lines, discussing many subjects which might seem deserving of more extended comment, did the limits of the book allow. For example, metabolism, medical ethics, germinal pathology are included in this list. Attention is drawn to the fact that cross references, with which the volumes are liberally supplied, are of much value in making an encyclopedia practical through facilitating immediate reference. With this we are in entire agreement. The contributors to this volume, as to the earlier ones, are an assurance of the accuracy of the statements made.

Volume IV carries the work from the latter part of the letter G through H and a part of I, containing 872 subject headings. The articles are for the most part brief and well illustrate the possibility of concise statement of important facts, a quality which many books, even of this character, fail to attain. Up to this point we heartily commend the work to our readers, a recommendation which we may be assured will not be changed when the succeeding volumes appear.

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THE QUESTION OF SPONTANEOUS GENERATION.

AFTER a long period of relative neglect, the subject of so-called spontaneous generation has again been revived through the recent publication of a book by Dr. H. Charlton Bastian, entitled, "The Evolution of Life." (E. P. Dutton & Co.) It will be remembered that some thirty years ago an active controversy went on regarding the origin of living matter in which the chief disputants were Dr. Bastian, Professor Tyndall and M. Pasteur. The controversy was aroused by a book published in 1872 by Bastian, entitled, "The Beginnings of Life," and actively prosecuted for a number of years. Now, for approximately thirty years, however, Dr. Bastian had not again taken up the cudgels in a discussion which had aroused much acrimony until the publication of the book to which we have alluded. Dr. Bastian is now emeritus professor of the principles and practice of medicine in University College, London, and consulting physician to several large hospitals. His professional life has been an active one, and it is evident that it was not through a withdrawal of his views but rather because of stress of other work that he has so long remained silent upon the subject which has always been of extreme interest to the scientific world. He now returns to the fray, reinforced in his position by the investigations of the past years, and at a time when all his adversaries, including Huxley, have passed beyond the reach of controversy.

In the exhaustive work which Bastian has now published he maintains his views, previously expressed, with unaltered firmness. He maintains that the logical point of view is to regard the production of living matter as a continuous series of evolutional results, and that the genesis of living matter is continually going on as it has been for ages past. To this process the general term of "archebiosis" is given. This point of view, Bastian urges, is substantiated by the most recent bacteriological investigation and by the study of various primitive forms of life. Huxley's famous dictum, *omne vivum ex vivo*, influenced by Pasteur's researches, Bastian asserts was not an impartial verdict, and that, as a matter of fact, Pasteur's own inductions have not stood the test of subsequent investigation. It is not possible in the space at our command to enter into the detail of argument which Bastian uses to substantiate his own and to repudiate the claims of his opponents. His general conclusion, however, is that the existence of lower organisms at this time cannot be explained as derivatives from primordial forms which originated in an incalculably remote past. Such an assumption, he holds, is contrary to the general evolutionary hypothesis. He believes, on the contrary, that the present existence of such organisms may be adequately and satisfactorily explained on the hypothesis that organic life in our own time is in the act of being continually evolved from inorganic matter.

It is not to be expected that this view of Bastian, commonly but not altogether properly called spontaneous generation, will be immediately accepted by men of science, but we likewise have no question that in this, as in other supposedly decided questions, renewed agitation will be of benefit and lead ultimately to the exact facts. From the point of view of the practical physician, the matter has a certain added interest. In relation to the contagium of various infectious diseases, it at once becomes of vital importance, not only to avert and find the source of infectious and contagious diseases, but also to search still more diligently into the conditions which render possible the production of the infecting agents. If certain fixed conditions are capable of producing agents of contagion, it forthwith becomes apparent that much of the work of the future lies in studying the conditions under which infection arises, as well as the natural history of the agents themselves. We may surely expect new light on this complex subject during the next fifty years. In the meantime it is well to maintain an open mind.

AMERICAN PHYSICIANS IN GERMANY.

THE kindness shown American physicians by German professors, privat-docents and assistants has been proverbial, but, perhaps, never more

than at the present time. Their clinics are held with open doors, their wards and laboratories are readily accessible, and even paid courses are frequently given to one or more Americans at great personal inconvenience to the instructor. In one clinic four times a week the foreign visitors are invited to a demonstration at which interesting cases are shown and the new lines of research there being carried on are described. The recipients of these courtesies are to a considerable extent individuals whose stay at any one particular clinic is transitory, seldom those who have gone to Europe with the intention of entering upon original research either abroad or at home. For the German teacher it is, therefore, all "give," but no "take."

If German medical hospitality is proverbial, American appreciation of German medicine is widespread. And this is evidenced on all public occasions and in our literature. To a considerable ex[illegible]his is known in Germany, but the mere pre[illegible]ce of a large body of American students in their midst exemplifies our admiration rather than our gratitude.

It not uncommonly occurs, however, that Americans, while attending German clinics, appear in quite another light than they would desire. We refer to their habit of "just dropping into a clinic," without first asking permission. We are convinced that this is from ignorance of German university customs and from the wish to occasion no inconvenience to the instructor. But it is not generally appreciated in this country that the salaries of university teachers in Germany come from two sources — the university or government and the individual student. It is easy to imagine the sensations which might arise in an instructor's mind when, looking up to crowded benches, he sees a group of unknown foreigners who have neither asked beforehand the privilege of being present nor expect afterwards to present their acknowledgments. Occasionally the matter is even more aggravating, because the popular teacher (and the Americans always find such a one out) may see his own students, who have paid him to lecture to them, turned away because their places have been filled by medical travelers from many lands. As to the feelings of a German student on such an occasion, perhaps it is as well not to enter. The reputation which is afforded a professor by a crowded clinic is not so great as might appear, for in the eye of the University the number of registered students and not the visitors count. It is true that the evident interest and the wrapped attention which the stranger gives the lecturer must be an inspiration and a reward far greater than money alone, but this does not take away from the American the obligation invariably to ask permission to attend a German clinic. Such a request is easily made and it is optional with the professor in granting it, whether he allows any encroachment upon his time.

REPORT OF STATE BOARD OF INSANITY.

THE eighth annual report of the Massachusetts State Board of Insanity covers a period relative to general matters for the year ending Sept. 30, 1906. The entire number of persons under supervision on October 1 was 12,388, or 274 more than the previous year. The larger proportion of these come under the category of the insane, being in the somewhat startling proportion of one insane patient to every 295 persons of the estimated population of the state. The statistics seem to show that there has been a slow but steady increase in the number of insane, but in the estimation of such statistics it should always be borne in mind that methods of classification are continually changing and that the condition itself depends largely upon definition. There has, however, been a decline in the number of patients treated at public institutions, a possible reason for which is given in the following statement: "It is probable that the present general prosperity tends to diminish the inflow of patients into institutions by furnishing work which in dull times might not be available for an indifferent class of labor, and, by affording a larger and steadier income to the bread-winner of the family, increasing the ability to care for dependents."

The statements which follow regarding commitments, first cases of insanity, nativity and other matters of statistical significance should be carefully read by those interested in the great problem which mental disease presents. It is evident, if our classifications can be made uniform, and if some definite conception of what is to be included under the heading of insanity be established, statistical reports will become of increasing value from year to year. This volume is an excellent example of a carefully prepared public report.

MEDICAL NOTES.

YELLOW FEVER. — It is reported that an outbreak of yellow fever has appeared in the American garrison at Cienfuegos. Up to August 13, eleven cases had appeared, but it is not likely that the disease will spread to any extent.

Professor von Leyden's Successor. — It is stated that Professor H. His, a son of the anatomist, will succeed Professor von Leyden at the University of Berlin in the chair of special pathology and therapeutics.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 7, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 24, scarlatina 21, typhoid fever 16, measles 38, tuberculosis 68, smallpox 0, leprosy 0.

The death-rate of the reported deaths for the week ending August 7, 1907, was 20.19.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 10, 1907, was 222, against 237 the corresponding week of last year, showing a decrease of 15 deaths and making the death-rate for the week 18.99. Of this number 128 were males and 94 were females; 218 were white and 4 colored; 161 were born in the United States, 64 in foreign countries and 7 unknown; 53 were of American parentage, 146 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 30 cases and 5 deaths; scarlatina, 19 cases and 0 deaths; typhoid fever, 19 cases and 0 deaths; measles, 33 cases and 3 deaths; tuberculosis, 48 cases and 14 deaths; smallpox, 0 case and 0 death. The deaths from pneumonia were 14, whooping cough 1, heart disease 27, bronchitis 0 and marasmus 8. There were 22 deaths from violent causes. The number of children who died under one year was 56; the number under five years, 24. The number of persons who died over sixty years of age was 34. The deaths in public institutions were 78.

Day Camp for Tuberculosis. — It is reported that 140 persons are enrolled as patients of the day camp for tuberculosis in Mattapan near Boston. Upwards of twenty are on the waiting list. From these facts it appears that this charity is demonstrating its usefulness and is appreciated by an increasing number. Most of the patients go from the tenement sections of Boston, South Boston, East Boston and Chelsea, in spite of the time taken in travel and often the excessive heat. Records already show marked improvement in many cases, and it is not to be questioned that the plan begun tentatively two years ago has proved a most valuable adjunct to the other methods in the treatment of the disease. Visitors to the camp are welcome at any time.

NEW YORK.

Roof Playgrounds and Gymnasiums. — Among the American delegates to the second International Congress of School Hygiene, just held in London, was Dr. Luther H. Gulick, supervisor of physical training in the New York public schools. He states that the Congress was deeply interested in the roof playgrounds and gymnasiums of New York. In his opinion, America leads the world in the matter of the physical training of school children, but in Europe more attention has as yet been paid to medical supervision. This, he believes, will not be the case long, as it is now being recognized that a complete knowledge of the child's physical as well as mental condition is essential before his education is undertaken.

Mortality during July. — The weekly reports of the Health Department show that during the month of July the mortality in the city represented an annual death rate of 18.71, as against 16.94 in June and 19.33 in July, 1906. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from measles declined from 28.5 in June to 27.75 in July; the weekly average from scarlet fever, from 26.75 to 17.75; from diphtheria and croup, from 38.75 to 32.25; from influenza from 4.75 to 0.75; from epidemic cerebrospinal meningitis, from 11.75 to 10; from pulmonary tuberculosis, from 159.5 to 150.25; from pneumonia, from 83.5 to 43.75; from broncho-pneumonia, from 97.5 to 77.25; from cancer, from 66.25 to 58.5; from apoplexy, congestion and softening of the brain, from 49 to 41.5; and from organic heart diseases, from 132.75 to 117.5. Among the diseases in which there was an augmented mortality, were the following: The weekly average of deaths from typhoid fever increased from 8.75 to 10.5; from malarial fevers, from 1 to 1.75; from acute bronchitis, from 13.5 to 14.25; from diarrheal diseases, from 67.25 to 323.75; from diarrheals under five years of age, from 60.75 to 313.75; from Bright's disease and acute nephritis, from 96.5 to 103; and from cirrhosis of the liver, from 19.75 to 25.5. The corrected death rate, excluding non-residents and infants under one week old, was 17.67. During the first part of July the health of the city was exceptionally good.

In the week ending July 6 the death rate was only 16.13, the lowest point reached since the first week of November of last year; while in the corresponding week of 1906 the death-rate was 19.19. Later in the month, however, there was a rapid increase in the deaths from diarrheal diseases in infants and young children, and in the week ending July 27 there were 550 deaths from this cause in children under five, as against 373 in the corresponding week of last year. The generally recognized association of broncho-pneumonia with summer diarrhea is also shown in the statistics; for while in the corresponding week of 1906 there were but 38 deaths reported from this disease, in the week ending July 27, 1907, these amounted to 85.

Obituary.

SIR WILLIAM TENNANT GAIRDNER.

The recent death of Sir William Tennant Gairdner removes another distinguished physician of the older generation. Dr. Gairdner was born in Edinburgh in 1824, and therefore had lived to the ripe age of eighty-three. His father had been a distinguished practitioner in Edinburgh, and it was not unnatural, therefore, that the son should follow in the same profession. He was graduated in medicine in 1845, while still under twenty-one, and shortly after graduation returned to Edinburgh as resident physician of the Royal Infirmary. In 1848 he became pathologist to the Infirmary, in 1850 a fellow of the Royal College of Physicians of Edinburgh, and in 1853 a physician to the wards of the Infirmary and lecturer on the practice of medicine. In 1862 he received the appointment of professor of medicine in the University of Glasgow, at the age of thirty-eight. He thereafter devoted nearly forty years to medical practice and research in the west of Scotland, and during that period numbered among his colleagues many men of great prominence, among whom were Lister, William Ramsey and John Caird. His interest in public health began while still at the Edinburgh Infirmary, and in 1863 the Corporation of Glasgow appointed him their first officer of health, a position which he held for nine years. Sir William was the first president of the Glasgow Pathological and Clinical Society, founded in 1873. He later made an unsuccessful application for the chair of medicine in Edinburgh, vacant by the death of Laycock. Although unsuccessful in attaining this object of his ambition, he received the honorary degree of LL.D. from Edinburgh University in 1883, and from that time on various other honors were bestowed upon him, among others knighthood in the year 1898. Some years before his death Gairdner had become the victim of the Stokes-Adams syndrome with the development of a periodic slow pulse which ultimately became permanent. His death, on the 28th of June, was sudden. Gairdner was one of that large class of physicians for which England and Scotland have become famous, who combined much learning with good fellowship and rare affability of manner.

Current Literature.

Medical Record.
July 20, 1907.

1. *Lockwood, G. R. *The Clinical Course of Gastroptosis and Its Treatment.*
2. Hussakof, L. *On Recent Investigations of the Action of Radium on Plants and Animals.*
3. *Dardel, J. *Sulphur Waters in the Treatment of Syphilis.*
4. *Keating, E. *The Early Diagnosis and Home Treatment of Pulmonary Tuberculosis.*
5. MacDonald, A. *Studies of Juvenile Criminals.*
6. Stump, W. *Treatment of Malaria in the Vicinity of New York.*

1. Lockwood discusses gastroptosis and its management. Out of 2,000 patients he has found 351 suffering from gastroptosis. The disease runs a typical and characteristic course, and can be divided into stages. It begins with subnutrition and nervousness, and occurs especially in persons with an acute costal angle. In such persons prophylactic treatment should be instituted. In the first stage there is gastroptosis alone without any symptoms. In the second temporary atony sets in with intermittent symptoms, consisting of gas in stomach, heartburn and distress after eating. Later follow permanent and continuous symptoms. Gastritis is not an etiological factor, neither is tight-lacing. In fact, a straight-front corset gives support and is of value. Intermittent atony is brought on by mental and physical strain. Fermentation has been proven by the author's experiments not to occur in atonic stomachs, in which food is perfectly digested as a rule. High gastric acidity exists and prevents fermentation. Distress depends on the amount of gas and quantity of food. Neurasthenia and constipation result. Flushing of the colon will bring away strings of mucus. Restricted diet brings on subnutrition and makes the patient worse. Examination of stomach contents shows a top layer of clear liquid and a lower one of digested food. Inflation is valuable to aid in diagnosis. Treatment of permanent atony involves rest in bed for four weeks with entire absence of worry and of society, with a trained nurse in charge; hot baths and spinal douches, massage and a very nutritious diet, excluding fruits and red meats, given in six small meals a day. Bromide is an indispensable remedy. Under such treatment weight increases, the curvature of the stomach rises, and a cure is complete after six weeks or so. Prophylactic treatment consists of teaching the patient not to undergo strains, mental or physical, and keeping up the general condition.

3. Dardel says that the treatment of syphilis by the use of sulphur waters does not pretend to cure alone, but forms a very valuable auxiliary treatment which may be combined with a course of mercurial treatment and will help greatly in the absorption, action and elimination of the drug. The cure is indicated at any period of the disease, since nutrition suffers at all stages. Patients suffering from arterio-sclerosis, or liver trouble, and those that are highly nervous should not undergo an active sulphur cure. It is especially indicated in those that take mercury badly, or can tolerate but a small dose of it, and in those in whom therapeutic action of mercury is not easily obtained. Also in cases of great destruction of tissue, or severe infections in feeble and worn-out patients. Again in lesions of the nervous system, ulcerative lesions that threaten great destruction to the organs affected, and other such lesions in which there is no time to lose. The treatment strengthens the patient and enables him to take more mercury and assimilate it better. The sulphur of the water forms alkaline sulphides. Some are oxidized to hyposulphites and sulphites, but the most of it forms hydrogen sulphide, which is eliminated by the lungs and skin. It has a general tonic and exciting action and

liberates mercurial compounds stored up in the system. The author describes the use of sulphur waters externally and internally at Aix-les-Bains, where massage combined with douching is an important factor in the treatment. Marloiz water is also drunk.

4. Keating refers to cases that are really incipient, giving no marked tuberculous symptoms and no physical signs. The facts elicited from physical examination of the chest should be regarded as only confirmatory of the diagnosis. Important factors are family history, occupation, spitting of small amounts of blood, chilly sensations, very slight fever, an indefinite history of night sweats, loss of weight, constipation, clammy hands, a red line on the gums and shallow breathing. Respiration may be slightly jerking, with harsh inspiration. The pulse is accelerated. As to the treatment the author does not favor the use of tuberculin. He recommends beginning treatment with six weeks' rest in bed, in the open air as far as possible. Three meals a day should be taken and milk and eggs used besides. The most useful drugs are arsenic and nux vomica. No cough mixtures should be used. The best sedative is milk and eggs taken before going to rest for the night. Morphine is the only remedy for profuse hemorrhage.

NEW YORK MEDICAL JOURNAL.

JULY 20, 1907.

1. *Clark and Atwood. *A Report of Cases of Landouzy-Déjerine Myopathy (congenital), Thomsen's Disease and Enchondroma of the Hypophysis.*
2. Rectenwald, J. J. *Perforative Appendicitis Due to Plum Stone.*
3. Kenerson, V. *Seven Gunshot Wounds of the Body.*
4. Uhle, A. A. *Chancroid and Its Complications.*
5. Berg, W. N. *The Relation Between the Physiological Acton of Ions and Their Physico-Chemical Properties.* (To be concluded.)
6. Kennedy, J. C. *Pelvic Tumors in Little Girls.*
7. Bryant, B. L. *The Rational Treatment of Nervous Diseases.*
8. Chandler, G. *The Treatment of Acute General Peritonitis.*

1. Clark and Atwood report a series of cases of rare types of nervous disease. The first is a case of Landouzy-Déjerine myopathy or the facio-scapulo-humeral type of progressive muscular dystrophy. the atrophy first appearing in the face. This case is especially noteworthy in that the disease was apparently congenital; no other congenital case is found in the literature. Other conditions described are peroneal dystrophy, Thomsen's disease, multiple enchondroma, acute poliomyelitis in an adult, and two cases of anterior poliomyelitis with exaggerated knee-jerk. [F. W. P.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JULY 20,1907.

1. *Bevan. A. D. *Nitrous Oxid as an Anesthetic in Major Surgery.*
2. *Mitchell, J. F. *Local Anesthesia in General Surgery.*
3. *Lusk, G. *Prepared and Predigested Foods.*
4. *Allen, A. H. *Homologous Bacteria as a Vaccine in Tuberculosis.*
5. *Wentworth, A. H. *The Cause of Infantile Atrophy Deduced from a Study of Secretin in Normal and Atrophic Infants.*
6. Keiper, G. F., and Burrage, S. *Yeast Cells as a Probable Cause of Ulcerative Keratitis.*
7. Woods, H. *Ocular Neurasthenia.*
8. Davis, A. E. *A Protest against the Employment of Paraffin Injections Near the Eyes or the Use of Solid Paraffin in the Capsule of Tenon after Enucleation, with Report of Two Cases of Injury.*
9. Rogers, F. T. *Premiums Paid to Experience.*
10. Zeisler, J. *Pemphigus.*
11. Hartzell, M. B. *The Salicylates in the Treatment of Lichen Planus.*
12. Stewart, J. C. *A Case of Benign Melanosis.*
13. MacLaren, A. *Personal Surgical Errors.*
14. Hess, C. *Modern Views on Physiology and Pathology of Accommodation.*
15. *Laplace, E. *Experimental Pathology and Surgical Treatment of Erysipelas.*
16. Hoover, C. F. *The Sudden Appearance of Apnea in the Course of Tabes Dorsales and Arterial Sclerosis.*
17. Hunt, R. *The Probable Demonstration of Thyroid Secretion in the Blood in Exophthalmic Goiter.*
18. Pyle, W. L. *Myopia Associated with Opacities of the Cornea.*

1. Bevan has gradually increased his use of nitrous oxid as an anesthetic, now employing it in a large proportion of his general surgical cases, including operations upon the gall-bladder, kidney, stomach and appendix. He maintains that it is the safest anesthetic as well as the most agreeable to take. Administered with air, anesthesia of a half hour to an hour can be secured. The expense involved in its use could be greatly reduced in hospitals if apparatus for its production were placed in operating rooms. It is proposed that a committee on anesthetics be appointed to study and report each year's progress in this field of work.

2. Mitchell advocates the more general use of local anesthesia. When first introduced local anesthesia fell into dispute on account of poisoning due to too strong solutions of cocain. Recent methods, however, with weaker solutions, the injection of nerve trunks, and the addition of adrenalin to solutions under the danger of cocain poisoning are slight. The author's experience includes a wide range of operations done under local anesthesia. In operating upon inguinal and femoral hernias he feels that general narcosis is never necessary. It is important to understand the relative sensibilities of different tissues. The skin being thoroughly anesthetized, there is little sensation in the subcutaneous tissues and in muscles so long as blood vessels, large nerve trunks and connective tissue bundles are avoided. Periosteum is exquisitely sensitive, but when this has been cocainized the bone beneath has no sensation, as is shown by a case of trephining which is described. The dura was incised and the brain cortex touched without sensation. The parietal peritoneum is sensitive but the visceral peritoneum and the viscera are not. Clamping and cauterizing the appendix give no sensation, but pulling on the mesentery causes pain referred to the epigastrium, and nausea. The liver and kidney have been incised without pain. In preparing solutions tablets of cocain .05 gm. and adrenalin .00016 gm. sterilized, are dissolved in sterile salt solutin. Such solutions containing 1% of cocain are used for nerve blocking, and .1% solutions are used for ordinary infiltration.

3. Lusk calls attention to the importance of a correct understanding by physicians of the food requirements of the body, especially the proteid and fuel requirements. He points out the false claims made for the advertised breakfast foods, the merits of which lie in their flavors and not in their exaggerated nutritious value. The various malt extracts are also mentioned as well as the peptone preparations, which consist chiefly of albumoses which are liable to cause diarrhea, and the liquid peptonoids which contain a considerable quantity of alcohol and only about 25 gm. of proteid to the pint bottle. It is said that many patients have died of proteid starvation through the ill-advised administration of these preparations. If used as a flavor or stimulant their limitations should be fully recognized.

4. Allen describes his work in attempting to produce a vaccine for tuberculosis from bacilli contained in sputum. The process is given in outline. The object in obtaining the bacilli from sputum is double. In the first place it is thought to be possible that the bacilli from the patient under treatment may be so specialized as to have special properties adapting them for use in immunizing the particular patient from whom they are obtained. In the second place it is thought that bacilli directly from the human body may possess properties which are lost in artificial cultivation. The preparations obtained contains, besides tubercle bacilli, pus corpuscles and other bacteria. The bacilli other than the tubercle bacillus may be of value in effecting immunity against secondary infections.

5. Wentworth suggests as a possible cause of infantile atrophy, a defective correlation of the several digestive organs, stomach, intestines, pancreas and liver. This hypothesis is based on the discovery of Bayliss and Starling of the substance called by them "secretin," originating

in the small intestine and passing from it through the blood to the pancreas, and to some extent to the liver, which organs are stimulated by it to secrete. He reports experiments on cats made to ascertain the effect on the pancreatic secretion of the secretin obtained by Bayliss and Starling's method from the cadavers of atrophic, newborn and other infants. The tabulated results show that the material obtained from the intestines of atrophic infants possessed little or no power to stimulate the flow of pancreatic juice in the cat, indicating either a lesser strength or quantity of secretin present. The secretin from well-nourished infants and children, on the other hand, always caused activation of the cat's pancreas. He thinks it very unlikely that the diminution of secretin can be due to inanition, as suitable food restores the functions rapidly before the general marasmus of the infant has been bettered. He has also experimented to ascertain as far as possible how much it can be due to digestive disturbances, etc., and while his investigation is not yet finished, he is inclined to offer the following hypothesis as the result of the research thus far to explain the cause of infantile atrophy. The digestive functions of the very young infant are not activated because it does not receive the only food capable of activating them, viz., mother's milk. This leads the stomach to secrete an inadequate gastric juice, and the duodenum is therefore not stimulated to form normal secretin. The defective secretin insufficiently stimulates the pancreatic secretion, and leads probably to as yet unstudied disorders of the function of the gut lower down. What renders the milk specific in this way is now engaging his attention and he hopes to be able to answer it in the future. It is possible that it is due to some hitherto overlooked specific substances or to certain hitherto disregarded factors in chemical composition.

15. Laplace advocates in the treatment of erysipelas superficial scarification of the reddened area and of the skin for an inch or so beyond its border, followed by applications of ice-cold bichloride of mercury acidified by the addition of 5 parts in 1,000 of hydrochloric acid.

[F. W. P.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

MAY, 1907.

1. *WATTS, S. H. *The Suture of Blood Vessels. Implantation and Transplantation of Vessels and Organs.*
2. MUMFORD, J. G. *Boston Medicine One Hundred Years Ago and a Notable Physician of the Last Century.*
3. HELMHOLZ, H. F. *An Adenoma of Island of Langerhans.*

1. Watts's article begins with an exhaustive historical review of work done upon the suture of blood vessels, from the lateral sutures of wounded veins and arteries, the circular sutures of divided vessels and various anastomoses, to the implantation and transplantation of arteries and veins and the replantation and transplantation of organs. The results reported are too numerous for detailed mention in this abstract. They include many failures, and a general want of certainty of results remains even in the most recent work. Many successes, however, are striking, particularly those attained in the transplantation of organs, notably of kidneys, with maintenance of function. Watts then reports in detail the results of his own experiments, undertaken to determine in what proportion of sutures of vessels success may be expected. Working with dogs he operated 31 times upon vessels of the neck with perfect results in 28; of 12 operations upon the femoral vessels only 2 were entirely successful, the failures being attributed to the impossibility of keeping the wounds properly dressed. It is concluded that, when aseptic technic is good, completely divided vessels can be sutured with almost uniform success.

[F. W. P.]

SURGERY OF GYNECOLOGY AND OBSTETRICS.

JUNE, 1907.

1. *MOYNIHAN, B. G. A. *Operations for Non-Malignant Disease of the Stomach.*
2. *SAMPSON, J. A. *The Relation of Ovarian Cysts to Abdominal and Pelvic Pain.*
3. SENN, N. *Ancient Military Surgery.*
4. *GRAHAM, E. A. *Latency of Carcinoma.*
5. TAUSSIG, A., and SHARPE, N. W. *Wrongly Diagnosed Cerebral Abscess.*
6. BECK, C. *Leontiasis Ossea with Halisteresis (Loss of Bone Salts)*
7. HIRST, B. C., and KNIPE, N. L. *Fibromyomata of the Round Ligaments.*
8. *KANAVEL, A. B. *Surgical Intervention in Leontiasis Ossea.*
9. FREEMAN, L. F. *Internal Derangement of the Knee-Joint.*
10. HERZOG, M. *Peculiar Cases of Traumatism of Internal Organs, Some Due to Tropical Conditions and Practices.*
11. RICHARDSON, M. H. *The Technic of Appendectomy.*
12. STOWE, H. M. *The Treatment of Post Partum Hemorrhage.*
13. WATSON, A. *Hydatid Disease in Australia.*

1. Moynihan gives his results in 334 operative cases of non-malignant stomach disease, dividing them into the following groups: (1) Perforating ulcer, 27 cases with 18 recoveries and 9 deaths. (2) Recurrent hemorrhage, 33 cases, of which 27 recovered and 6 died. (3) Miscellaneous cases 248, with but 2 deaths. (4) Hour-glass stomach. 26 cases, with 4 deaths. The perforation of an ulcer of the stomach never comes unannounced. In many of the patients the symptoms have persisted for months, and in some they have been of greater severity in the weeks or days preceding the rupture of the ulcer. When perforation occurs there is a sudden agonizing pain, but there is neither shock nor collapse as a rule. The pulse at the first is not rapid and the abdominal muscles may not be rigid. Moynihan has always found exquisite tenderness of the skin, the least stroking of the surface with the finger being resented. He further insists that the onset of those symptoms, formerly considered as necessary to a diagnosis,—collapse, abdominal distension, rapidity and smallness of pulse — should not be allowed to develop. A diagnosis can be made from the history of ulcer, the sudden onset and continuance of intolerable pain, restriction of thoracic movements, surface tenderness, and abdominal rigidity, or restriction of the normally free abdominal movements. Early operation in these cases, with infolding of the ulcer, is always indicated. Unless the ulcer is so near the pylorus as to cause obstruction, or unless a second ulcer can be seen in the vicinity of the pylorus, gastroenterostomy is not necessary. Drainage is necessary only in the late cases. When used it should be by a supra-pubic wound with the patient kept in the sitting posture. In the cases in which hemorrhage necessitated operation, this was always from a chronic ulcer. It is the repetition of hemorrhage in increasing quantity at decreasing intervals that is the only cause demanding operation for its instant relief. Infolding of the ulcer with gastroenterostomy is the safest and best procedure in such cases. In men 50% of the bleeding ulcers are in the duodenum, while in women 66.6% are in the stomach. In performing the posterior no-loop gastroenterostomy the normal jejunal direction should be observed and maintained. To make the anastomosis always in one direction, Moynihan feels to be wrong.

2. The presence of abdominal or pelvic pain in patients with ovarian cysts usually indicates either secondary changes in the cysts, involving some sensitive nearby structure, or the presence of some other condition independent of the cyst which may cause pain. The principal causes of pain arising from ovarian cysts are traction or twisting of the pedicle, or traction on the parietal peritoneum from adhesions. These findings are based on 10 cases operated on by Sampson under local anesthesia.

4. Graham reports a case in which six years after amputation of the breast for scirrhous cancer, multiple metastatic foci were found in the viscera at autopsy, there having been absolutely no clinical symptoms leading to a suspicion of their presence. Dense bands of adult fibrous tissue intersected the tumor area; in some places there was a complete capsule around the whole mass.

8. Kanavel believes that in some cases of leontiasis ossea operation should be done either to relieve cerebral compression, or encroachment upon the orbital and nasal cavities. Obstruction of the blood supply and operations for cosmetic purposes may be considered. [W. C. Q.]

JULY, 1907.

1. ALLEN, D. P. *The Teaching of Surgery.*
2. *MAYO, W. J. *Acquired Diverticulitis of the Large Intestine.*
3. *ROBERTS, J. B. *Continuous Passive Hyperemia in Delayed Union of Fractures.*
4. VAUGHN, G. T. *Aneurysmal Varix.*
5. FINNEY, J. M. T. *Rhinoplasty by Means of One of the Fingers.*
6. *MAYO, C. H. *Treatment of the Posterior Capsule of the Gland in Thyroidectomy.*
7. HUNTINGTON, T. W. *Non-Parasitic Cyst of the Spleen.*
8. VANDERVEER, A. *End Results in Operation for Carcinoma of the Breast.*
9. *GREENOUGH, R. B., SIMMONS, C. C., and BARNEY, J. D. *The Results of Operations for Cancer of the Breast at the Massachusetts General Hospital.*
10. JONAS, A. F. *End Results in Operations for Cancer of the Breast.*
11. MEYER, W. *End Results Following Operations for Carcinoma of the Breast*
12. DENNIS, F. S. *Report of End Results Following Operations for Cancer of the Breast.*
13. JOHNSON, R. W. *Resection of the Sound Femur in Gigantism and Asymmetry.*
14. WEEKS, S. H. *Some Considerations in Regard to Brain Surgery.*
15. GERRISH, F. H. *The Diverticulum Ilei as a Cause of Complete Intestinal Obstruction.*
16. MACLAREN, A. *Prostatectomy.*
17. ALLIS, O. H. *Congenital Dislocation of the Hip.*
18. *CRILE, G. H. *Further Consideration of the Surgical Treatment of Cancer of the Neck.*
19. *FREEMAN, L. *The Desirability of the Early Operations Upon the Nerves in Ischemic Paralysis.*
20. STOWE, H. M. *Prolapsus Funis.*
21. DE LEE, J. B. *The Induction of Labor at Term.*

2. Mayo reports 5 certain and 4 probable cases of diverticulitis of the sigmoid. These cases all occur during the age when cancer is common (over forty years) and are often confounded with it. The clinical diagnosis cannot be positively made, but one should always consider this condition in a case presenting left-sided pain low in the abdomen coming in spells and associated with constipation. The rather sudden formation of a mass, following such an attack of pain, would make the diagnosis yet more probable. Blood in the stools is an important sign in favor of cancer. The surgical treatment depends upon the condition present. Localized suppurative cases must be treated by free drainage. If, in conjunction with the infectious process acute obstruction of the bowel develops, a temporary artificial anus should be made. If a considerable tumor is present and the symptoms do not show a tendency to disappear it is better to make a primary resection of the affected bowel before abscess and fistula supervene. The milder cases which tend to spontaneous recovery do not suggest operative treatment.

3. Roberts advises the use of elastic constriction in the treatment of delayed union of fractures. He uses the bandage more or less continuously and of a firmness just sufficient to produce a slight bluish venous congestion at and below the seat of fracture.

6. In an experience based on over 375 operations for goiter Mayo has seen but one case develop tetany and that only in the slightest degree. Some myxedema and other evidences of hypothyroidism have been present in a few cases before operation and in none has this condition been increased. In 5 cases the hoarseness from the effects of pressure has been increased by operation. The careful preservation of the posterior capsule of the thyroid gland protects against many of the dangers of thyroidectomy.

9. Out of 416 cases of primary operation for cancer of the breast at the Massachusetts General Hospital from 1894 to 1903 inclusive, 376 were traced to a conclusive end result at an average period of eight years after operation. Sixty-four cases were alive and well and 7 died without recurrence over three years after the operation. Counting in the operative mortality, there were 320 attempts at radical cure, 67 of which (20.9%) were successful. During this period palliative operations were performed on 56 patients (15%) and 52 cases were discharged untreated. Cases in which the tumor was ulcerated or was adherent to the skin or to the chest wall, and cases in which the axillary glands were palpably enlarged, gave notably less promising results than when these conditions did not exist. No case with palpably enlarged cancerous glands above the clavicle, and no case of cancer of both breasts, was cured. Medullary carcinoma was more grave than that of the scirrhous type, and adeno-carcinoma and colloid were relatively of a far less malignant type. The duration of the disease and the age of the patient exerted little influence on the prognosis. Extensive operations with wide removal of skin gave the greatest freedom from local recurrence. Removal of the pectoralis minor appeared to be of slight significance. Incomplete operations on early cases yielded better results than extensive operations on cases which were well advanced. Recurrence in the scar occurred in less than one-half of the cases; internal metastasis was most frequent in the lungs, mediastium, axillary and supra clavicular glands, the liver and the spine. Seventeen out of 88 cases (19%) of those passing the three-year limit without evidence of recurrence, showed recurrence later, and 4 cases developed recurrence six years or more after the operation.

18. Crile makes the following statements: (1) The operative technic of cancer of the neck has reached the point of development which enables the surgeon to operate each case individually, with sole reference to excising every particle of malignant growth, and in no way recognizing the so-called types of operation such as Whiteheads, Kocher's etc. (2) The loss of blood plays an important rôle in the remote as well as in the immediate results. (3) The immediate use of the x-ray applied upon the naked wound is useful. (4) The only tissue which must be respected to the extent of determining the breadth of the excision of the growth is the common or internal carotid artery; the sterno-mastoids — one or both — the sterno-thyroid, sterno-hyoid and platysma muscles, either on one or on both sides, need not be considered as of functional importance in weighing the chance for a successful eradication of a malignant growth. On the same ground, neither the internal nor the external jugular on one or on both sides need be considered, nor a unilateral excision of the vagus, of the phrenic or of the hypoglossal nerves. (5) The creation of a granulation tissue barrier across the base of the neck under cocain anesthesia, by the packing of iodoform gauze in the deep planes of the neck prior to operation, protects the mediastinum with almost certainty. (6) The immediate operative risk has fallen to a minimum. (7) The chances for final cures compare favorably with those of cancer of the breast. Of the patients operated previous to 1900 31% have no recurrence, while of those operated between 1900 and 1904, 40% have no recurrence.

19. Freeman emphasizes the fact that when the nerves are badly involved in ischemic paralysis, and show no signs of prompt recovery, they should he liberated from compression early, before hopeless degenerative changes set in. [W. C. Q.]

THE LANCET.

JULY 20, 1907.

1. HEWITT, F. C. *General Surgical Anesthesia. Lecture I.*
2. SIMPSON, W. J. R. *The Croonian Lectures on Plague.*
3. ROGERS, L. *A Common Sporadic Seven-day Fever of Indian Ports Simulating Dengue.*
4. *FORSYTH, D. *Experiments on Prolonged Protein Feeding with Special Reference to the Thyroid Gland and the Osseous System.*
5. OLLERENSHAW, R. *Male Triplets with Eclampsia in a Patient Aged Sixteen Years.*
6. *CLARKE, H. H., and SUTHERLAND, H. G. *On the Effect of Tuberculin on the General Tuberculo-Opsonic Index in Tuberculous Patients.*
7. WEBER, F. P. *Multiple Hereditary Developmental Angiomata (Telangiectases) of the Skin and Mucous Membranes Associated with Recurring Hemorrhages.*

4. Forsyth experimented on fowls fed on semi-raw meat over a long period with a view to confirm or disprove Watson's statements that this diet will cause changes of

importance in the thyroid gland. He concludes as a result of his investigations that there are no changes or hypertrophy of the thyroid; and that there are no bony changes providing there is lime enough in the diet. In none of the birds was there any indication of gout, but there was an unusual amount of colloid in the pituitary gland. His results cast considerable doubt on Watson's experiments.

6. Clarke and Sutherland report results of a study of the effect of tuberculin (T. R.) on the positive and negative phases of the opsonic index. They believe that by rapidly increasing doses it is possible to raise the index for a considerable period. They have made 492 observations of the index in 32 tuberculous cases, but do not pretend to define the value of tuberculin in treatment, or of the opsonic index as a guide to that treatment.

[J. B. H.]

BRITISH MEDICAL JOURNAL.

JULY 20, 1907.

1. *WILLIAMSON, R. T. *The Vibrating Sensation in Diseases of the Nervous System.*
2. CAVE, E. J. *The Spa Treatment of Neurasthenia.*
3. SMITH, E. *Laryngismus Stridulus in Newborn Infants.*
4. *WILSON, T. S. *Remarks on the Value of Rhythmical Exercises in the Treatment of Spasmodic Neuroses.*
5. CHILDE, C. P. *The Educational Aspect of the Cancer Problem.*
6. MACKAY, C. G. *A Case that Seems to Suggest a Clue to the Possible Solution of the Cancer Problem.*
7. CHEATLE, G. L. *Inflammatory Changes in Posterior Spinal Root Ganglia in Cases of Cutaneous Cancer.*
8. CUNNINGHAM, H. H. B. *A Case of Streptococcic Conjunctivitis.*
9. WELLMAN, F. C. *Preliminary Note on Some Bodies found in Ticks.*

1. Williamson has made a study of the so-called "vibrating sensation" which is felt when a vibrating tuning fork is placed, foot down, on a subcutaneous bony prominence in many parts of the body. This sensation varies in health and in disease and its presence or absence may be an important diagnostic sign. He concluded that it is a delicate test for slight impairment of sensation in early tabes, in slight peripheral neuritis, and often in diabetes mellitus. In diseases strictly limited to the motor structures the vibrating sensation is not lost even at an advanced stage of the disease. If it is found to be lost it means that the disease is affecting the sensory structures also. In cases of paraplegia from spinal caries, and occasionally in spinal syphilis the loss of the vibrating feeling may be the only objective symptom of affection of sensation. In hemi-anesthesia due to organic disease the vibrating sensation is felt when the foot of the vibrating tuning fork is placed on the edge of the sternum on the side of tactile anesthesia, while in hysterical hemi-anesthesia the reverse is the case.

4. Wilson believes in treating the various spasmodic neuroses, such as spasmodic torticollis, not by surgery but by developing a rhythmical movement the reverse of the one constituting the neurosis, and curing it by this means. He gives the details of this treatment in torticollis and various trade spasms.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, No. 25.

JUNE 20, 1907.

1. JOSEPH, M. *The Treatment of Venereal Diseases.*
2. *CRONER, F., and SELIGMANN, E. *The Retention of Atoxyl in the Organism.*
3. SICK, P. *Border Lands in the Bier Treatment.*
4. *PROSKAUER, A. *Typical Typhoid Ulcerations in the Stomach and Duodenum.*
5. GOSSNER. *A Simple and Easy Method of Performing Agglutination Tests by Means of Stained Preparations.*
6. *KAMP. *An Addition to the Knowledge of Myotonia Congenita.*
7. GOLDSCHMIDT, R. *A Simplified Trituration Apparatus.*
8. LEUWER, C. *A New Ear Pump.*
9. BOESSER. *Treatment of Hay Fever with Injections of Atropine and Quinine.*
10. SCHAFFER. *New Principles in the Construction of Röntgen Tubes.*

2. Croner and Seligmann conducted a series of experiments on dogs and human beings showing that, contrary to previous reports, arsenic can be found in the stools and urine for considerable periods after the injection of atoxyl. In dogs the subcutaneous injection of 1.5 gm. for three consecutive days caused a marked arsenic reaction eighty hours afterwards. Tests on human beings gave the same results.

4. Proskauer reports the clinical history and pathological findings of a very severe typhoid in a young child. The immediate cause of death was a purulent peritonitis, which bacteriologically showed streptococci and for which no perforation of a typhoid ulcer or mesenteric gland could be found. The stomach, duodenum and jujenum were thickly strewn with typical ulcers, which were younger anatomically than those in the cecum. Culturally the ulcers showed the paratyphoid bacillus B, and the serum reaction was positive to this organism and negative to the typhoid bacillus. Such marked ulcerations in the stomach and upper intestine are exceedingly rare.

6. Kamp was able in connection with a case of myotonia congenita to trace the disease back through four generations, and concludes that the disease is inherited through both the male and female, but in the male line it is quickly extinguished, while in the female it persists for a long time. If the disease stops in one member of a family, the descendants are free from it.

[L. G. M.]

Tetany. CHOVSTEK (*Wien Med. Wochenschr., No.* 23) says that all those factors which previously have been considered as being the etiological cause, are merely exciting causes. In individuals affected with tetany, the onset of menstruation, an angina, or as the author has seen, the injection of tuberculin, is sufficient to excite an attack. The specific cause of the reaction in tetanic individuals is a constitutional one, and is probably associated with a functional disturbance of the parathyroid glands.

[L. G. M.]

Herpes in Cerebro-spinal Meningitis. EINHORN (*Wien Med. Wochenschr., No* 23) finds that herpes occurs in over half of the cases of epidemic cerebrospinal meningitis, and that it has the following characteristics: it appears commonly from the third to the sixth day of the disease, and persists for a considerable period, rarely as long as fourteen days. The vesicles are unusually numerous and thickly sown, with fresh vesicles appearing alongside of old crusted lesions. The site of the eruption is often atypical as in the gluteal region, the lobe of the ear, finger, or scalp. The involution of the vesicles is considerably longer than that of the herpes in ordinary febrile diseases, and often leaves small scars.

[L. G. M.]

Miscellany.

PHYSICAL CONDITION OF WEST POINT CADETS.

A WRITER in the *Medical Record*, having made some severe strictures on the physical condition of the cadets at the United States Military Academy at West Point, Lieut.-Col. Charles Moore Gandy, chief surgeon at the Academy, has taken sharp issue with the author of the communication. The latter claimed that the cadets were so overtrained, worked so hard, and got so little sleep, that their constitutions were so run down and they were so physically unfit that they were unable to resist infections or adverse conditions which were harmless to others. When he saw the corps he was painfully impressed by their bad condition, which, he believed, fully accounted for their lowered vitality and resistance. The great majority, he said, had thin, drawn features and very slender figures, suggesting emaciation.

They seemed to have been "worked down" or "trained" to a condition which the progressive element in the medical profession now recognized as one of dangerous exhaustion with little surplus for emergencies. In support of his claim he stated that the newspapers had reported that a large number of West Point cadets were made ill by their stay at the Jamestown Exposition and that two or three contracted typhoid fever, while a large number of cadets of other schools went to the Exposition and were quartered amidst the same unsanitary conditions, and yet no reports of such sickness were reported about these. Furthermore, he contended that even in athletics the West Pointers did not excel, while in science or letters the Academy's graduates were seldom heard from. Colonel Gandy states that it is true that three of the corps contracted typhoid fever at Jamestown, but this was not due at all to the unsanitary condition of their quarters. Two of them took the disease from eating ice cream, aganist which the cadets had been warned, and the third from drinking water from a penny-in-the slot device, which was supposed to furnish water, but which an investigation showed to be connected with a common water main. The general health of the West Pointers, he says, was as good as or better than that of the other cadets there, and if any infectious disease occurred among the latter it was hardly like that it would be reported, for the reason that immediately after leaving Jamestown the boys scattered to their homes in all parts of the country. In the year ending June 30, when he made his annual report, there was not a single case of contagious disease in the Academy, and for more than eleven years there had not been a death among the cadets there. He then denies the fact that the cadets were overtrained and claims that the corps is the finest body of young men in the country, physically, mentally and morally. He thinks the world has heard something of Ulysses S. Grant and Robert E. Lee. At the present time, Colonel Goethals is in charge of the work on the Panama Canal. His immediate aids are West Pointers, and it was to the graduates of the Academy that the country had to look for the carrying on of this great undertaking, after various others had given it up.

THE GYNECOLOGICAL STOMACH.

Women of all classes, when subject to diseases of the genital tract, tend to be dyspeptic as well. The two conditions are often results of the same cause, whilst too often, possibly, treatment aggravates both. That nutrition is not independent of the influence of some compound or some nerve agency in the genital organs there can be no doubt, but what that compound or agency precisely may be science has not as yet revealed to us. Hence, gynecologists are often taunted about their ill success in the treatment of dysmenorrhœa, chronic ophoritis, anorexia nervosa and allied disorders more or less intimately associated with dyspepsia as a more or less marked complication. On the other hand, surgery has triumphed where definite, objective lesions can be removed. It need hardly be said that we refer to ovariotomy and hysterectomy. Yet are there no objective lesions in any of the chronic cases, where stomach-aches, flatulence, vomiting or anorexia are so marked as complications? Are these gastric lesions due purely to lutein, of which we know but little, to vaso-motor changes somewhere, or to our own mismanagement combined with the patient's stupidity and hypochondria? Experience shows that there may be very definite lesions, so definite, indeed, that they ought to be diagnosable. Over twenty years since, Howitz, of Copenhagen, pointed out that gastric pains and dyspepsia after abdominal sections and peritonitis are not rarely caused by adhesions, especially omental. Operators sometimes find the transverse colon so much dragged upon by omental adhesions as to assume the form of a letter V, the point coming close to the bladder. The stomach itself is occasionally dragged downwards in the same manner. Dr. Cerné, of Rouen, discussed the gynecological stomach at the Congrès National de Gynécologie, held last April in Algiers. He admitted that too much had been talked about dyspepsia in ladies with a metritic diathesis, curable by treatment at inland watering places. He insisted, however, that cases are to be met with where a genital lesion is the origin and direct cause of gastric troubles. In enteroptosis, and even in many cases where the parietes are normal, the stomach comes down very low when the patient stands up, but it can be pushed up to its natural level by the hand with the greatest ease. Cerné carefully examined two patients where the stomach could not be replaced, for it was fixed by an adhesion down to one iliac fossa. Both patients were subject to disease of the uterine appendages, and, in Cerné's opinion, the stomach, or, at least, the omentum, adhered to the diseased structures. Other gynecologists have, we understand, met with adhesions of this kind. Hence, where there is a distinct history of old pelvic inflammation, verified by exploration of the genital tract, dyspepsia and other gastric disturbances may imply something more definable and more manageable than a pure neurosis. — *British Medical Journal.*

IMMUNIZATION AND THE PROPHET OF FRESH AIR.

Of the gospel of immunization we need only say that it is a dream, which, however beautiful, is still very far from fulfillment. It cannot be denied, however, that, even in its present inchoate stage of evolution, it has certain advantages. The pity is that so far, while its benefits are positive from the practitioner's point of view, they are often more or less problematic from that of the patient. But it cannot be said that the temper of mind to which the system gives rise in those who follow — or perhaps it might be more correct to say which gives rise to the system — is one that makes for the progress of practical

medicine, that is to say, for the deliverance of mankind from the majority of the ailments from which it suffers. The Pharisee of science looks down on the mere physician or surgeon, giving thanks that he is not even as this publican of practice. Yet what the people ask for is the bread of cure, or, at any rate, relief, and from the laboratory they too often get a stone, occasionally even a serpent.

As for the other prophet, who foretells that the medicine bottles on surgery shelves will be replaced by sunlight and fresh air, the practitioner will probably be inclined to ask where he can get a sufficient and constant supply of these valuable therapeutic agents. The wholesale prescription of these things to poor folk "in populous city pent" is as "extraordinary" as any of those of the ancient doctor who is made the object of cheap ridicule. "Simple living" is by no means easy, except to rich people who have nothing else to do; and that otiose phrase "suitable diet" must sound like a bitter jest to poor starving folk who have to feed themselves and their children on what they can get — too often out of the gutter. — *Practitioner.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 3, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1806	949	Quincy	7	2
Chicago	—	—	Waltham	7	1
Philadelphia	—	—	Pittsfield	6	1
St. Louis	—	—	Gloucester	3	—
Baltimore	255	135	Brookline	3	1
Cleveland	—	—	North Adams	8	2
Buffalo	—	—	Chicopee	16	11
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	9	—
Washington	—	—	Leominster	7	2
Providence	90	44	Hyde Park	7	3
Boston	224	68	Melrose	3	0
Worcester	36	10	Newburyport	—	—
Fall River	57	49	Woburn	9	3
Cambridge	19	5	Marlboro	4	1
Lowell	49	34	Westfield	3	—
Lynn	23	10	Peabody	—	—
New Bedford	36	27	Revere	3	—
Springfield	35	16	Attleboro	5	2
Lawrence	30	19	Clinton	2	2
Somerville	7	2	Adams	—	—
Holyoke	19	16	Gardner	4	3
Brockton	17	6	Milford	—	—
Malden	8	—	Watertown	4	1
Chelsea	24	12	Plymouth	—	—
Salem	15	10	Weymouth	—	—
Newton	13	3	Framingham	2	1
Haverhill	7	1	Southbridge	11	5
Fitchburg	5	4	Wakefield	—	—
Everett	3	3	Webster	—	—
Taunton	18	9			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 31, 1907.

BANKS, C. E., surgeon. Leave of absence granted Surgeon Banks for one month from June 20, 1907, amended to read twenty-eight days only. July 26, 1907.

SMITH, A. C., surgeon. Directed to proceed to Wheeling, W. Va., for special temporary duty, upon completion of which to rejoin his station at Pittsburg. July 25, 1907.

FRICK, L. D., passed assistant surgeon. Granted leave of absence for seven days from July 22, 1907, under paragraph 191, Service regulations. July 22, 1907.

GOLDBERGER, JOSEPH, passed assistant surgeon. Directed to proceed to Brownsville, Tex., and other places in that portion of the state, for special temporary duty, upon completion of which to rejoin his station in Washington, D. C. July 26, 1907.

MCCOY, G. W., passed assistant surgeon. Directed to proceed to Brownsville, Tex., and other places in that portion of the state, for special temporary duty, upon completion of which to rejoin his station in Washington, D. C. July 26, 1907.

WARREN, B. S., passed assistant surgeon. Relieved from duty at Boston, Mass., and directed to proceed to Chicago, Ill., reporting to the medical officer in command for duty and assignment to quarters. July 25, 1907.

TRASK, J. W., assistant surgeon. Detailed as recorder of board for completion examination of applicants for entrance to the service, vice Joseph Goldberger, relieved. July 29, 1907.

OLSEN, E. T., assistant surgeon. Granted leave of absence for seven days from July 26, 1907, under paragraph 191, Service Regulations.

OLSEN, E. T., assistant surgeon. Granted extension leave of absence for seven days from August 2, 1907. July 26, 1907.

STILES, CH. W., Chief Division of Zoölogy, Hygienic Laboratory. Detailed to represent the service at the Seventh International Zoölogical Congress, to be held in Boston, Mass., August 19–23, 1907. July 25, 1907.

BRINCKERHOFF, W. R., Director Leprosy Investigation Station, Hawaii. Detailed to represent the service at the Sixth International Dermatological Congress in New York, N. Y., September 9–14, 1907. July 24, 1907.

SPOHN, A. E., acting assistant surgeon. Granted leave of absence for thirty days from July 1, 1907, and excused for a further period of two months from the expiration thereof, without pay. July 29, 1907.

TOWNSEND, F., acting assistant surgeon. Granted seven days' leave of absence from July 29, 1907. July 29, 1907.

TOWNSEND, W., acting assistant surgeon. Granted extension leave of absence for seven days. July 28, 1907.

MACDOWELL, W. F., pharmacist. Granted leave of absence for fifteen days from August 1, 1907. July 29, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Chicago, Ill., for the purpose of making a physical examination of an Inspector of Immigrants. Detail for the Board: Surgeon G. B. Young, Chairman; Acting-Assistant Surgeon William Kimmet; Acting-Assistant Surgeon J. J. Gerkin, Recorder. July 25, 1907.

BOOKS AND PAMPHLETS RECEIVED.

The Essential Similarity of Innocent and Malignant Tumours. A Study of Tumour Growth. By Charles W. Cathcart, M.A., M.B., C.M. (Edin.), F.R.C.S. (Eng. and Edin.). Illustrated. New York: William Wood & Co. 1907.

The Seventeenth Annual Report of the Eye, Ear, Nose and Throat Hospital, 1906, New Orleans, La.

Treasury Department, Public Health and Marine-Hospital Service of the United States. Hygienic Laboratory. Bulletin No. 43.

Surgical Instruments in Greek and Roman Times. By John Stewart Milne, M.A., M.D., Aberd. Illustrated. Oxford. 1907.

Morris's Human Anatomy. A Complete Systematic Treatise by English and American Authors. Edited by Henry Morris, M.A. and M. B. Lond., F.R.C.S. Eng., and J. Playfair McMurrich, A.M., Ph.D. Fourth edition, revised and enlarged. Illustrated. In five parts, Parts III, IV and V. Philadelphia: P. Blakiston's Son & Co. 1907.

Materia Medica and Pharmacy. By Reynold Webb Wilcox, M.A., M.D., LL.D. Seventh edition, revised. Philadelphia: P. Blakiston's Son & Co. 1907.

Surgery, Its Principle and Practice. By various authors. Edited by William Williams Keen, M.D., LL.D. Vol. II. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Leprosy as Seen by the Hawaiian Practitioner. By Philip R. Waughop, M.D. Reprint.

Massage in Sprains, Bruises, and Dislocations. By Douglas Graham, M.D. Reprint.

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Original Articles.

TORTICOLLIS.

THE RESULTS OF THE TREATMENT OF CASES OF ACQUIRED AND CONGENITAL MUSCULAR TORTICOLLIS AT THE BOSTON CHILDREN'S HOSPITAL, SINCE 1879.*

BY E. H. BRADFORD, M.D.,
Consulting Surgeon, Boston City Hospital; Senior Surgeon, Boston Children's Hospital; Professor of Orthopedics, Harvard Medical School,
AND
JAMES WARREN SEVER, M.D.,
Junior Visiting Surgeon, Boston Children's Hospital.

THE object of this paper is not to consider the subject of torticollis as a whole, but to present the conclusions in regard to the treatment of torticollis as justified by the experience obtained at the Children's Hospital in the last twenty-eight years. In this paper the term "torticollis" will be applied as referring to that deviation of the head which results from the contraction chiefly of the sternocleidomastoid. The term "torticollis" is, of course, equally applicable to other forms of deviation of the head, namely, that resulting from the reflex spasm in caries of the spine, that resulting from muscular irritation, from the presence of inflamed glands, that from irritation following arthritis of the vertebral articulations, and that resulting from a lack of balance of the muscles following general nervous disorder, but the subject here presented will be limited to a consideration of the methods of treatment of the ordinary torticollis due to the contraction of certain muscles of which the most important is the sternocleidomastoid.



FIG. 1. Torticollis. Right. McDermott, age four and three-quarter years. Date of admission, May 26, 1888. Date of discharge July 13, 1888. Duration, fall at one year. torticollis began one year later. Contraction of right sternomastoid and anterior edge of trapezius. Operation, June 2, open incision, division of sternomastoid and fascia. Buckminster-Brown apparatus.

These cases of wry neck have been due to many causes, the principal one being congenital, the others being caused by the usual rheumatic, traumatic and post-febrile conditions, such as

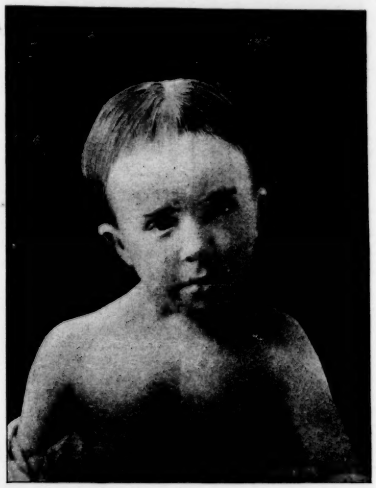


FIG. 2. Torticollis. Right. Howard, age four. Date of admission, Feb, 11, 1895. Date of discharge, April 15, 1895. Duration, two years. Cause, unknown. Operation, Feb. 14, 1895. Dead.

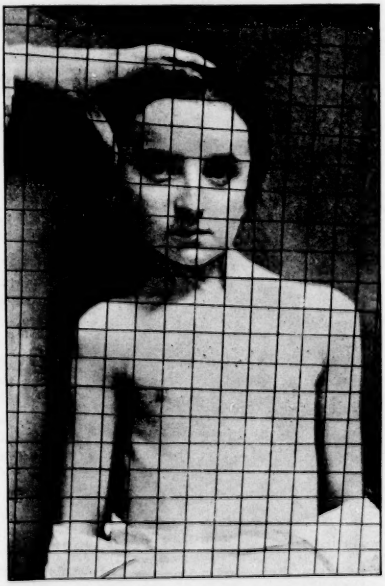


FIG. 3. Torticollis. Left. O'Connor, age eleven. Date of admission, Sept. 3, 1896. Date of discharge, Sept. 29, 1896. Duration since two years of age. No cause. Operation Sept. 5. Fascia and probably both congenital insertions of muscles divided. Traction. Plaster.

*Presented before the American Orthopedic Association, at Washington, May 9, 1907.

typhoid, measles, influenza and scarlet fever. There have been a number of cases of torticollis, but not of the true muscular type, due to tuberculosis, of the cervical vertebræ. These, however, have not been considered in this paper.

We intend to show by this report that muscular torticollis in children from two to twelve years of age is easily cured by appropriate methods; that the result is immediate, that no post-operative gymnastics are needed so far as the cure of the deformity itself is concerned, that simple resection of the two origins of the muscle is all that need be done, and that only rarely need the Scalenii be divided; that the simple transverse incision is the best, and causes the least deformity in the resulting scar; that it is not necessary to remove the entire muscle, as has been done, and that the after-treatment is simple, and of not long duration.

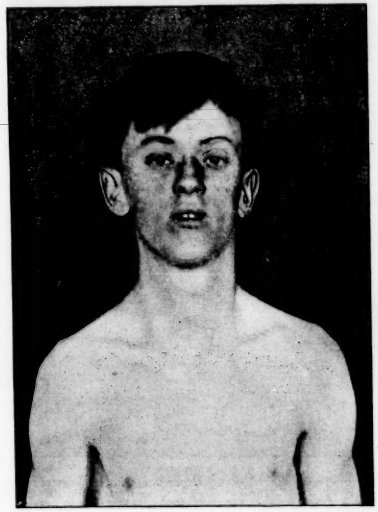


Fig. 4. Torticollis. Right. Driscoll, age five. Date of admission Aug. 28, 1896. Date of discharge, Sept. 3, 1896. Duration, three years. Since birth. Operation, Aug. 28, incision, myotomy, plaster.



Fig. 5. Before operation.

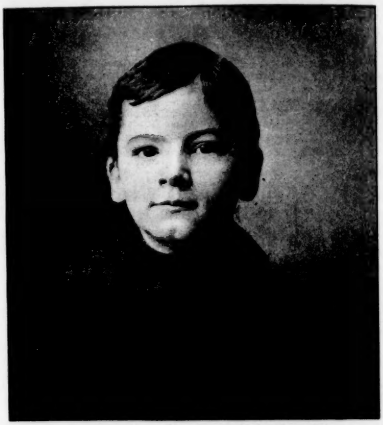


Fig. 6. After operation.



Fig. 7. Torticollis. Right. Carew, age eleven and one half. Date of admission, Feb. 15, 1900. Date of discharge, Feb. 28, 1900. Duration, since birth. Operation, Feb. 20, incision, myotomy. Buckminster-Brown brace.

We are able to report, however, one case, a child a day old, which presented torticollis due to a partial rupture of the sternocleidomastoid of one side, the result of manipulation at birth.



Fig. 8.

Whether this is a common cause of torticollis is a subject which will require the presentation of other facts than those the writers have at their command.

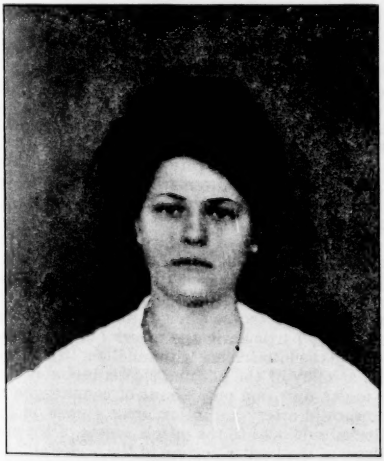


Fig. 9. Torticollis. Left. Carmel, age ten. Date of admission, Sept. 5, 1900. Date of discharge, Sept. 17, 1900. Duration, three years following measles. Operation, Sept. 11. Incision, myotomy, plaster.

ETIOLOGY.

In considering the etiology of the cases of torticollis occurring at the Children's Hospital since 1879 a number of them may be easily accounted for by various traumatic or inflammatory causes. These, however, form but a small part of the total number of cases.

In looking over Table No. 1, it may be seen that those cases which have had a congenital origin form by far the largest number individually.

TABLE NO. 1.

Total number since 1879,	90
Total number operated upon,	72
Congenital,	46
Not ascertained,	21
Abscess of neck,	3
Rheumatic,	5
Post-typhoid,	1
Post-measles,	1
Post-scarlet fever,	2
Cervical adenitis,	2
Hematoma at birth,	2
Instrumental labor,	4
Influenza,	1
Traumatic,	2



Fig. 10. Torticollis. Left. Clark, seven years, eleven months. Date of admission, Aug. 15, 1902. Date of discharge, Aug 21, 1902. Duration, last two years. Operation, Aug. 18. Incision, myotomy with plaster cuirass.

It will not be necessary to consider further these cases from an etiological point of view, with the exception of those of the congenital type.

Congenital cases. — The usual history in these cases has been that either of a deformity existing at birth, or of a gradually increasing deformity since birth. In none of these cases was there any history of hematoma or instrumental delivery.

There have been so many opinions expressed and causes assigned by various writers as to the cause of congenital torticollis, that it seems wise to review them briefly.

In looking over the great mass of literature on this subject we find that no definite conclusions have yet been reached. The theory of a hematoma alone as a cause has been disproved by Whitman and others, and Witzel has shown by experiments on animals that the artificial production of a hematoma is not followed by contraction of the muscle, either transitory or permanent.

Heredity is to be considered, but is not infallible.

Three of our cases occurred in the same family in successive children.

Diffenbach, Jeannel, Pfeiffer, Fischer and Jachimstal in defense of their theories all cite cases of hereditary torticollis.

The co-existence of other congenital malformations is to be considered as a cause also, such as clubfeet, hands, congenital dislocation of the hip, etc. In none of our series of cases was there any accompanying deformity.

Nervous origin. — Nélaton, Golding Bird, Gallavardin and Savy think that the cause may be sought in a lesion of the central nervous system, and cite a case with autopsy where there was found atrophy of the anterior horns of the spinal cord in the upper cervical region. They think that it may be analogous to infantile paralysis.



FIG. 11. Showing after-treatment with Buckminster-Brown brace.

However, the most plausible and reasonable theory which has yet been advanced is that of Josserand and Vianny, who advocate the *ischemique théorie.*

By a series of autopsies on cases of congenital torticollis in babies, with careful dissection of the sternocleidomastoid muscle with its blood supply followed by injection experiments on the arteries they have shown that the sternal head receives normally the smallest amount of blood furnished to any other portion of the muscle. With the head flexed and rotated in the position it would normally resume " in utero " the arterial supply is much diminished, or wholly cut off, owing to pressure on the sternomastoid middle artery, by the surrounding parts, and the proximity of the thyroid cartilage. This artery is a small branch from the superior thyroid artery, and is the sole source of supply to the sternal head of the sternomastoid muscle.

The deformity then is due to a markedly diminished blood supply, resulting in a degeneration of the muscle fibers, with subsequent sclerosis and contraction.

Facial asymmetry. — The question of facial asymmetry has not been covered as yet, and there are several points of interest to be considered in connection with it. Taken in order these are as follows:



FIG. 12. Three sisters. Posterior view.

1. Causes of facial asymmetry.
2. Is it present at birth in congenital cases of torticollis?
3. How long may a case go without operation before the facial asymmetry becomes permanent, even after operation?
4. Is it wise to operate upon a case of long standing torticollis, with marked facial asymmetry which may result in a cure of the wry neck, but cannot cure a facial deformity?

1. " Asymmetry of the face is ascribed to the gravitation of the blood to the more dependent side, to muscular tension, to pressure and retarded development of the vessels and nerves on the side of the concavity; to tension of the soft parts, particularly the muscles of the sound side and the interference with function." (Young.) The atrophy of the affected side is probably due to faulty nutrition on account of compression of the carotid artery and other great vessels on the affected side, and to the misplacement of the epiphyses of the basilar portion of the occipital bone and the effect of the weight of the skull on the other cranial and facial bones. This latter theory probably explains the osseous changes in the face and asymmetry of the skull.

2. In most cases of congenital torticollis there is a facial asymmetry existing at birth.

3. A number of our cases were of eight and even ten years' duration, before operation, but examinations at present show practically no asymmetry or atrophy. It is probably safe to say that all

cases should be operated upon between two and ten years of age, if permanent deformity is to be prevented.

4. In adults with torticollis of long duration, presenting marked atrophy and asymmetry, it becomes a question for the patient to decide after having the situation fully explained to him. The asymmetry will probably not clear up, and the atrophy may become more noticeable.

PATHOLOGY.

There were no opportunities in our series of cases to verify the pathological condition in the cases of congenital origin, but as these conditions have been pretty well worked out by others we will simply summarize them briefly.

It is usually the sternal head which is affected. This presents on examination an interstitial degenerative myositis. It has never presented the characteristics of hemorrhage with muscular rupture.



FIG. 13. Three sisters. Anterior view.

The affected area is usually found entirely deprived of muscular fibers, with few exceptions presenting a waxy, hyaline condition. What few muscular fibers may be left show a disappearance of their striæ. This condition is constant in children from two to ten. It is also found in any part where the vascular supply is interfered with, as in the ischemic paralysis of Volkman, too long use of the Esmarch bandage, too tight bandaging following immobilizing fractures of the arm, lesions of the great vessels, exposure to excessive cold, causing a slowing down or stopping of the arterial circulation. Histologically, these conditions are similar to those which exist in torticollis.

THE METHODS OF TREATMENT.

These may be enumerated as a non-operative method, muscular stretching, and stimulation; and an operative method, by subcutaneous tenotomy, or open incision.

The non-operative method. — In the cases which have come under this inquiry, a few have previously been treated by non-operative methods; one for several months at a western institution where the treatment consisted of a partial suspension massage and manipulation; in the second case the method was partially applied for some time by domestic nursing. Nothing can be said in favor of this method of treatment as it is manifestly irrational and unscientific. In all typical cases of contraction of the sternocleidomastoid muscle, the rational treatment, therefore, may be considered to be the operative method.

Operative method. — In the early experience of one of the writers, both as hospital interne and later in the early years of his practice as an orthopedic surgeon, the accepted method was by subcutaneous tenotomy. It was considered advisable to divide freely with a small tenotome both insertions of the sternocleidomastoid. One of the writers has performed this operation in two cases and would record his opinion that while the method is capable of giving satisfactory results and diminishes the danger of sepsis and does away with the possibility of a scar, yet the disadvantages of the method are so evident that no conscientious surgeon can recommend that method of operation. This will be readily seen by any one who has performed this operation by open incision and who is familiar with the anatomy of the sternocleidomastoid muscle.

The operation to be thorough will consist of an open incision thoroughly dividing the sternocleidomastoid. There has been some discussion among various writers on the subject as to the proper place of incision of the sternocleidomastoid; whether this should be divided at its insertion, the mastoid process; at its origin on the sternum and clavicle, or in its middle. There are disadvantages in the incision in each of these three points. These can be formulated as follows:

(*a*) The muscle at its insertion at the mastoid process can be readily reached; it can be stripped and separated well from its bony attachment without danger of dividing or wounding the internal jugular.



FIG. 14. Fixation apparatus in bed. After operation.

(*b*) The operation is readily performed and the resulting scar is in a position where it will not be noticeable.

(*c*) The disadvantages of the division of the muscles at the mastoid process are such, it would seem to the writers, as to prevent its adoption in preference to that of the division of the muscle at its origin on the clavicle and sternum.

(*d*) The chief disadvantage of the division of the muscle at the mastoid process is that the muscle at its insertion has a broad attachment and may be looked upon as a surgical aphorism that it is preferable in operating to use incisions which will divide the least amount of tissue. One of the writers has performed the division at the mastoid process in three cases; the results have been excellent, and the method is one which is of value in the hands of competent surgeons, but it does not seem to the writers to have any advantages which justify its adoption.

The division of the sternocleidomastoid at its middle has been advocated by a few surgeons, with the understanding that by this means there is a greater immunity from the possibility of a relapse. The separation of the divided muscle will be greater in its middle than at its ends. The skin incision can be made in the direction of the force of the muscle and in the fold of the neck, and no great danger of a disfiguring scar need be entertained. The muscle at this point, however, is thick, the carotid artery and vein lying close to



FIG. 15. Case in which scalenus anticus was divided.

it, and for this reason the operation requires an unnecessary amount of care through an increased amount of risk.

The division of the muscle at its origin on the clavicle and sternum has the advantage of attacking the muscle where it is most superficial, the most easily reached, with the least dissection. It is for this reason that the writers would unquestionably place their preference for this point as the point for the muscular division in the treatment of torticollis.

It is advisable to take certain precautions to gain the best possible results. The question of scar is one which is of importance. A disfiguring scar upon the neck is, of course, a matter of some moment, and in one case operated upon by one of the writers a small keloid developed, which became a noticeable blemish. In a few other instances the union was not by first intention and a scar followed lasting through childhood. As a rule, however, the operation can be done with a minimum danger of any disfiguring scar. The surgeon, however, should bear this in mind and take unusual pains to prevent the scar and to secure the healing by first intention. It is desirable to plan in such a way that the scar will come just above or just below the clavicle, and that it will be parallel to the clavicle, it being manifestly easier that the skin incision should be made directly on the clavicle. In order to insure the proper position of the scar it is advisable to pull the skin up slightly before incising it. The skin can be divided without any risk if this is done, and it can be arranged that the scar should fall at a point where it will be least noticeable. The skin incision should be free, reaching from the middle of the sternum to at least one-third the length of the clavicle. The incision should be through the skin, subcutaneous tissue, as well as the external fascia, which includes fibers of the platysma. A director should then be inserted, passing it underneath the fibrinous attachment of the sternal end of the sternomastoid muscle and the muscle freely divided, cutting down on to the director which protects the deeper vessels. The director should then be inserted, passing it well under the clavicular attachment of the muscle, and the muscle divided in the same way.

An inexperienced surgeon performing this operation for the first time is apt to be disturbed at



FIG. 16. Buckminster-Brown brace. After operation.

the size of the gap which follows, the retraction of the muscle, and also the apparent depth of the resulting hole. This need, however, occasion no alarm. It is essential that the whole of the muscle should be divided and that the muscular division should be made half an inch above the insertion. After the incision is made in the skin and the retracting pressure removed, the incision will be found to have its center just below the clavicle. This may be regarded as the point of selection, although it may be regarded as neces-

sary to divide the whole of the muscle, including the fascia which covers it, and any fibrinous bands which are lying in the course of the muscle. In order to be sure that everything is divided it is advisable for the surgeon to pass his gloved finger into the wound in order to feel if anything remains undivided. The surgeon should not, however, attempt to divide the deep cervical fascia which is entirely free from the sterno-cleidomastoid and which, lying directly over the internal jugular, should be spared. One of the writers wishes to record an error made in violating this caution, where a division of the deep fascia was performed in an excess of zeal from the desire to prevent the persistence of any possible contraction. The incision wounded the internal

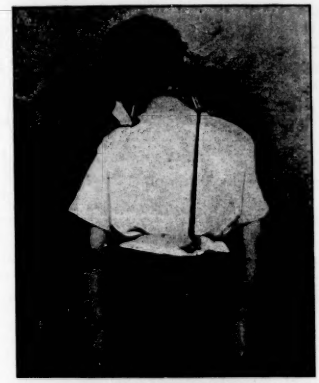


Fig. 17. Posterior view.

jugular and it was necessary to tie that vein, an operation which was both vexatious and dangerous. Fortunately no untoward result followed.

After the muscle is completely divided at both insertions, the surgeon or his assistant should take the patient's head in both hands and, having the shoulders held firm, the head should be twisted into an over-corrected position, and in this way all contractions in other minor muscles stretched.

One of the writers in one case was led to divide the scalenus anticus, but in the usual cases, in children at least, such an operation is entirely unnecessary.

If the operation is properly done no vessels are to be tied and the wound should be carefully closed. It it desirable not to pack the wound nor to leave drains in, in order to insure the absence of a scar. It is needless to say that complete asepsis is essential and that it can be readily secured by the employment of ordinary precautions. Although a cavity is left by the operation which would seem to require drainage, in the cases observed by the writers this has occasioned no trouble as the healing has taken place with the absorption of the blood clot.

Various ways are employed in dressing the wound from the ordinary dry dressing to sealing the wound with a tincture of benzoin. The writers are of the opinion that it is advisable to protect the wound with great care, not only from any septic invasion, but also from any friction. There is no great danger of wound gaping; and it is perfectly safe to close it with catgut sutures, but tension sutures should also be applied. The wound should be covered either with silver foil, or gelatin foil in order to prevent the possibility of rubbing the dry dressing; if that is not done the wound should be dressed the day following the operation.

After-treatment. — At the Children's Hospital two methods of fixation of the head following operation have been practised, both having been successful, and the writers have at various times preferred one and later the other manner of fixation.

If the child after an operation is placed upon a frame and the corrected position of the head maintained by three straps of adhesive plaster (see plate), one along the cheek of the elevated side, passing under the chin and stretching to a cord which hangs over the side of the bed, the chin can be held in an over-corrected position, provided a counter force is exerted by a strap of adhesive plaster passing upward over the opposite cheek, and a third strap passing under the patient's head, also connected with a weight, holds the plane of the face in a corrected position. These three straps can be arranged in a way to cause no



Fig. 18. Showing post-operative corrective apparatus.

discomfort. They permit the dressing of the wound if that is necessary, and, secured by sand bags at both sides of the head, furnish adequate fixation of the head in a corrected position.

In the earlier operations this was the method employed in all cases, but later the advantages of plaster of Paris as a means of fixation seemed manifest, namely, that the irksomeness of con-

finement to the bed is avoided for the patient. Considerable care must be exercised, however, in the application of the plaster of Paris bandages. In the first place the bandage must be applied in such a way that the head is securely held in an over-corrected position, the chin pointing to the opposite side to that which it held before, the plane of the face turned in an opposite direction from that which was held previously, and the ear on the contracted side, which was previously



FIG. 19. Showing post-operative corrective apparatus.

advanced, should be secured in a position more posteriorly. The mastoid process on the affected side should be as far away from the clavicle as possible. It is also important that the plaster of Paris bandage should not rub upon the wound. A window can be cut in the plaster so that the wound can be dressed or inspected.

In the application of the plaster bandage it is desirable that the upper part of the thorax be kept down, which, before the operation, had been raised. If the bandage is properly applied it causes no discomfort, but it can be readily seen that an improperly applied bandage would demand speedy removal.

Where the surgeon is perfectly sure of his technique, and a comfortable bandage is applied, it should be worn without change for a month, after which it can be renewed or left unchanged; but in case of the removal of the bandage some form of retention apparatus should be worn for at least three months following the operation.

Of the various apparatus which have been recommended the writers have found the wire collar, a modification of that introduced by Buckminster-Brown, the simplest and most efficient. In place of this, however, a leather collar, including the neck and also the upper part of the thorax, can be used. It is advisable that over-correction should be maintained for at least three months, after which the head may be gradually freed from its support and massage employed if desirable. As a rule, however, massage is not necessary.

These technical details, although tedious, are perhaps of some importance as they lead to the establishment of satisfactory results which have been obtained at the clinic at the Children's Hospital. It has been somewhat of a surprise to read in many of the journals of the dangers of relapse following the operation for torticollis. In order to determine this, the writers have examined the records of the Children's Hospital, going back twenty-eight years. The cases that were investigated were not all operated on by the writers, but by the writers and their colleagues. No classification is made of the names of the operators, but the method of operation and the technique employed have been substantially the same by the various surgeons performing the operation.

The number of cases investigated was 90; replies were received from 62 cases. The records of such cases as were not heard from were obtained in the hospital, and a note made of their condition at their last visit. As these cases were chiefly the ordinary hospital cases, the after treatment being carried out in the out-patient department, which includes no better care than what is furnished in most out-patient departments, and when it is recorded that recurrence took place in only two cases, and that in one no benefit was considered to be derived from the operation, by the parents, it may be considered that the operation is one which promises



FIG. 20. Showing contraction of sternomastoid muscle.

with ordinary care and after-treatment perfect results.

It is essential that the operation should be carefully done. It is also essential that the after-treatment should be thoroughly carried out. Neglect of either of these two factors would be followed by failure or partial success, but with attention and thoroughness the certainty of cure may be guaranteed.

RESULTS OF TREATMENT.

TABLE NO. 4.

Causes.	Operation.
Congenital,	43
Not ascertained,	15
Rheumatic,	1 sub-cutaneous tenotomy
Traumatic,	3
Cervical abscess opened and drained,	3
Instrumental labor,	4
Hematoma,	1
Post-influenza,	1
Post-measles,	1



FIG. 21. Showing contraction of sternomastoid muscle.

There were two cases in which there was a second operation owing to a recurrence of the deformity at intervals of four years in each case. This recurrence was due probably to two causes, namely, lack of completeness of the operation, and insufficient attention to after-treatment.



Showing adhesive strap for over-correction in bed. Post-operative.

The recurrence, however, in but two of the cases traced, answers well for the routine carried out at the hospital, and the skill of the operators. One of these cases was of the congenital type, and one was due to instrumental delivery. Since the second operation there has been no further difficulty, and the results on one of these cases may be seen by referring to picture No. 1.

Post cards were sent to each one of the cases in the series, asking for the present condition of the case, how long a brace or any other apparatus was worn following the operation, and requesting the patient to report to the hospital if the distance from Boston was not prohibitive.

Replies were received from 62 cases, 12 were not heard from, and 18 reported for examination and photographs. The replies received were intelligent and answered the questions asked, and the tabulated results may be seen in Table No. 2.

TABLE NO. 2.

RESULTS OF CASES OPERATED ON SINCE 1879 AT THE CHILDREN'S HOSPITAL.

Number of years after operation.	Head straight in all planes.	Improved.	No benefit.	Recurrence.	Not heard from.
1	11	4			1
2	3				
3	5				
4	7	1			
5	2	1		1	
6	3				1
7	3				
8		1			
9	1				
10	2				2
11	1				1
12	2			1	
13	1				
14	2				
	2				
16	2				
17	4				
18	2				
19			1		1
20					1
22		1			
23					
24					1
25					2
26					2
Totals,	53	8	1	2	12

Counted twice, 2.

TABLE NO. 3.

Total number since 1879,	90
Total number operated,	72
Total number stretched,	2
Number discharged with apparatus,	28
Number discharged without apparatus,	7
Number discharged with Thomas collar,	10
Number discharged with plaster,	27
Right-sided,	37
Left-sided,	36
Not noted,	2
Died in hospital from intercurrent causes,	4
Died outside the hospital from unknown causes,	1
Average age,	6.8
Boys,	39
Girls,	51
Oldest operated,	12 years
Youngest operated,	2 years

1. M. B. Girl, age eight. Right torticollis — duration since birth — no cause determined. Labor normal. No marked facial atrophy or asymmetry.

Operation, November, 1889. Open incision — both heads of sternomastoid divided. Plaster cuirass.

2. B. B. Girl, age six. Left torticollis — duration since birth — no cause determined. Labor normal. Operation, November, 1889. Myotomy. Plaster.

3. B. B. Girl, age five. Right torticollis — duration since birth — moderately contracted. No marked atrophy or facial asymmetry. Operation, November, 1889. Myotomy with open incision. Plaster. See group photos 12 and 13.

The three cases cited above are most interesting in that they occurred in successive children — all girls — in the same family. There is no family history of any similar previous condition, and there was a normal labor in each case.



Showing line of incision in skin.

The mother writes that the operations "were successful in every way." This was seventeen years after operation.

4. M. Van K. Age ten. Girl. Double torticollis — duration since birth. No further history obtainable. At two years of age she was operated upon in Michigan. Just what was done at that time could not be ascertained. There was a greater degree of contraction on the left side, as compared with the right. The head was thrown forward, and the shoulders elevated. There were no cervical ribs as sometimes occurs in these cases.

Operation, October, 1903. Myotomy with open incision on the left.

Result. — Apparatus. Buckminster-Brown brace worn six months. April 5, 1906. Father writes from Michigan that the operation was a success, and that the head and shoulders are quite straight.

5. N. McD. Girl, age four and three quarters. Torticollis, right. Duration two and one-half years following a fall. Torticollis noticed soon after. Operation, June, 1888. Open incision. Sternomastoid and fascia divided. Plaster for four weeks — followed by Buckminster-Brown brace for four months.

Result. — February, 1907, head in good position deep depression in the right neck, no facial asymmetry, motion all normal. See photo No. 1.

6. H. Boy, age four. Torticollis, right. Duration two years — cause unknown. Considerable tipping of the head to the right with rotation. Marked atrophy of the right face and asymmetry.

Operation. — February, 1895. Open incision, myotomy. This boy died in the hospital later from the measles. The picture is shown to illustrate the atrophy and facial asymmetry. Photo No. 2.

7. O. C. Girl, age eleven. Torticollis, left. Duration nine years, probably congenital.

Operation. — September, 1896. Open incision, myotomy and fasciotomy.

Result. — One year later head straight. Splint omitted. This case has not been heard from since. Photo No. 3 illustrates also the thread screen to show deviation.

8. Wm. D. Boy, age five. Torticollis, right. Duration since birth. No cause assigned. Congenital. Marked contraction of the right sternomastoid muscle.

Operation. — August, 1896. Open incision, myotomy — plaster.

Result. — February, 1907. No facial atrophy or asymmetry. Slight prominence of the left sternomastoid muscle — small hollow above the clavicle on the right. Motions all normal. Head straight. Wore brace two months. See photo No. 4.

9. H. A. Boy, age, four and one half. Torticollis, right. Duration since birth. Forcible delivery. Parents noticed a lump over the right sternomastoid at birth.

Condition. — Contraction of the right sternomastoid.

Operation. — November, 1899. Open incision. Myotomy both heads of muscle. Plaster four weeks, followed by Buckminster brace which was worn four months.

Present condition. — Head straight, moved freely in all directions. No atrophy of facial asymmetry. See photos Nos. 5 and 6. No. 5 before operation. No. 6, after operation.

10. C. Girl, age eleven and one-half years. Torticollis right. Duration since birth. Marked contraction of sternomastoid muscle — especially the clavicular portion. Only slight facial asymmetry.

Operation. — February, 1900. Open incision. Myotomy. Plaster for one month, and then Buckminster-Brown brace which was worn for seven months.



Incision in fascia.

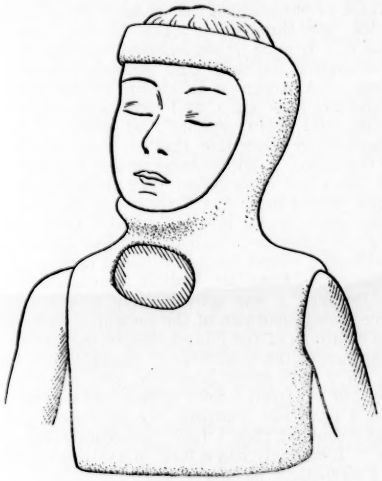
Result. — February, 1907, head nearly straight, still shows a slight tipping to the right. Sternomastoid muscle stands out as a distinct ridge as may be seen in photos Nos. 7 and 8, motions of head free.

11. B. C. Girl, ten years. Torticollis, left. Duration three years following the measles. Considerable contraction of the left sternomastoid muscle, no facial asymmetry.

Operation. — September, 1900. Open incision, myotomy. Plaster for five weeks. Brace, five months.

Result. — February, 1907, head straight in all planes. No asymmetry. Motions all normal. See photo No. 9.

12. E. C. Girl, age eight. Torticollis, left. Duration two years, cause not determined. Presents marked contraction of the left sternocleidomastoid muscle with facial asymmetry and atrophy. There is also a well marked degree of forward resistant shoulders and lateral curvature with reversed rotation.



Post-operative plaster cuirasse.

Operation. — August, 1902. Open incision and myotomy. She was put up in a plaster in the usual way and then fitted to a brace. The condition she presents to-day is not wholly satisfactory, for her brace was not worn consistently, which, combined with her lateral curvature and the forward shoulders prevented her complete cure. She is now under treatment for her lateral curvature. See photo No. 10. Photo No. 11 to show over-correction with the Buckminster-Brown brace as applied after an operation for a left-sided torticollis.

All of the acquired forms of torticollis responded as readily to treatment as those of the congenital type. Those cases which were not benefited or had recurrences were in the main due to the unwillingness of the parents to keep the brace on the proper length of time, and to have the child kept under frequent observation at the hospital.

The average length of time during which the child wore the plaster cuirass was about four to six weeks, after which the brace was applied to be worn for about six months, depending upon the individual conditions.

CONCLUSIONS.

In view of the results of the study of this large number of cases, covering such a long period of time, the writers think that the following conclusions may be stated, namely:

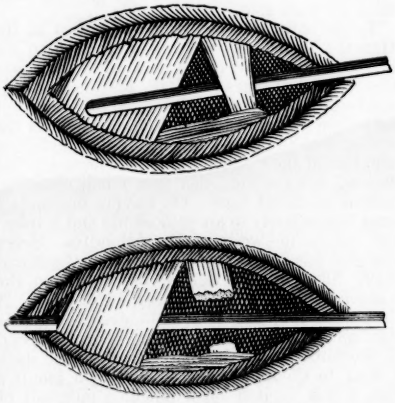
(*a*) That congenital or acquired muscular torticollis may be cured.

(*b*) That an open incision, with complete division of the two heads of origin of the sternocleidomastoid muscle, is all that is necessary, except in unusual cases.

(*c*) That the horizontal incision below the clavicle in the line of the skin cleavage is the best to use, in that it gives adequate room and also gives the best cosmetic results.

(*d*) That plaster of Paris is the easiest applied, holds the head in the corrected position, and allows ambulatory treatment, and is therefore the best immediate dressing.

(*e*) That the plaster cuirass should be worn not longer than two months.



Showing division of clavicular and sternal origins.

(*f*) That the Buckminster-Brown brace, Thomas collar, or wire collar should be worn for an average of four months following the removal of the cuirass.

(*g*) That it is best to operate on cases between the ages of two and twelve years, to insure a good result, and prevent permanent bony deformity of the face and head.

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Plans for a new building for the medical school of McGill University have been accepted by the Board of Governors, according to the *Medical Record*, and it is expected that the work of construction will commence without delay. The new building will be erected opposite the Royal Victoria Hospital, and is to consist of a central block facing the campus and connected at either side with pavilions running parallel with University Street and Carleton Road.

A SEARCH FOR A SUITABLE CLIMATE.*

BY SAMUEL A. FISK, A.M., M.D.
(*Formerly of Denver, Colo.*)

PART I.

BORN in Massachusetts, I spent six of the first seven years of my life in St. Paul, Minn., where I had "lung-fever," in consequence of a servant, whom I was teasing, throwing a pail of water over me. This simple thing has influenced my whole life, for, from that time, my lungs have been my weak spot.

In the spring of 1880, while a student at the Harvard Medical School, I was confined to my bed constantly for four weeks with what was then called "acute lobular pneumonia." It was before the days that we hunted for bacilli, but they were probably there. The character of the attack, and the care and skill of the physicians who passed their opinion upon the nature of the disease, warrant the belief that I had consumption of the florid type. On leaving my room I went immediately to an outdoor life and a splendid table, in western Massachusetts. Seven weeks of this and two weeks of examinations and worry filled in the time to my going to the Rangely Lakes, which I found awfully hot. I then went into the White Mountains, where I staid until the first of September. On the second of November I was in Denver. After ten days I went to Colorado Springs, and in a month's time I was located on a ranch, a mile out of town. The first of April, of the year 1881, saw me in a small frontier town, Poncha Springs, one of the toughest places in this country, trying to practise medicine. I took a thoroughly unexpected trip back to Massachusetts that fall, and was gone six or seven weeks. The summer of 1882 found me the resident physician at Estes Park, Colorado. That fall and winter I spent in western Massachusetts, where I had strong hopes of remaining. However, an opening, with a fellow-classmate, took me to St. Paul, Minn. Desirous as I was of staying there, the melting snow, the penetrating chill of the air, the fur overcoats of the old-timers, worn on the first of April, and finally a chill, made it apparent that this was no place for me, and so I went back to Colorado. I shall not soon forget the grateful warmth and dryness of the air on the plains west of Omaha. This has been an oft-repeated experience. I wish now to record a trip to Salt Lake City, over the freshly completed branch of the D. & R. G. R. R. On the first of May, 1883, I opened offices in Denver, Colo., and my experience there covers a period of fifteen years, during which time I was in very active work, and handled, as my fellows of this Association know, hundreds upon hundreds of cases of consumption. Six months after opening offices in Denver, I was attacked with inflammatory rheumatism, and coincidentally with a diabetes insipidus, or at least a polyuria, which has lasted ever since. The record shows that on leaving college I weighed 151 lbs. I ran down under this attack to 124 lbs. and to-day I tip the scales at 182 lbs. The cough and muco-purulent expectoration were present, and the fever and sweats were slight, so far as I recall. Since going to Colorado there have been at least two other attacks of pneumonia, a spontaneous fracture of a rib, another attack of rheumatism, the passage of tenia, the colds, sore-throats, etc., that mortal flesh is heir to. It must be remembered, too, that I was a stranger in a strange land, working hard all the time. "A workman is known by his chips." Time and time again, as I have been about my work, and more especially at night, I have thanked my lucky fate that my lines were cast in Colorado. I did not spare myself, but went at all times and everywhere. For years I walked, while others rode; and I always endeavored to keep warm, and I invariably had a good appetite. My digestion was good, and was considered, although I aimed not to be, finical or over-nice. Finally the American Medical Association came to Denver. I was active in the work of that time, being chairman of the section of medicine, the chairman of the finance committee, the vice-chairman of the committee of arrangements, etc. In all I held seven positions, and when that meeting was over, I went to bed, had a masseur, and I have not practised my profession since. Many thought that I had "progressive paralysis." I certainly had a form of ataxia probably of a circulatory nature.

Since then, for six years and a half, I have been a wanderer, living in steamer trunks. I spent several months, in the spring of 1901, in California, and was there with this body again in 1902. One winter I was in Nassau, Bahama Islands. I have been in the British Isles four times in all. One summer I was in Nantucket for several months consecutively. Once I was as far east as Sidney, Prince Edward Island, the Provinces, etc. I have been repeatedly at certain points of the Maine coast. I have wintered and summered in the hills of New England, and now have my home there. I have been to my old home, in Colorado, time and again. The cities and the country have seen me; and all the time I have endeavored to lead the "simple life." I have walked hundreds upon hundreds of miles, slept hours upon hours; and have eaten well, but simply.

My reason for wearying you with this long personal narration is that it must furnish the basis for what I have to say. The figures can and must be looked for elsewhere.

When the trouble with my lungs attacked me, I was supplied with money, not lavishly, but in amounts sufficient to take me, and care for me within reason. I thus came under the class that has been wisely spoken of elsewhere, that could do as seemed best, — the class whose pocket-books are not masters of the situation. From the time that I began to work, in 1881, I have practically paid my way.

The problem that presented, in 1880, was that of a man, unmarried, twenty-four years old, having a college and medical-school education, and a

* Read before the American Climatological Association, at Washington, D. C., May 7, 1907.

moderate purse, quite moderate; broken down with consumption. There were not, nor have there ever been, hemorrhages, and there was a good digestion, and a disposition on the part of the system to repair. I was sent to Colorado, and to Colorado I went, as thoughtlessly as any young man; my medical training did not cut any figure with me. I was sent and I went. In those days Colorado was not the Mecca for the consumptive that it has since become. I regard the choice as in every way a wise one. Why?

Colorado is pre-eminently a land of outdoor life. The constant sunshine invites and it is hard not to yield. This factor of constant sunshine is one on which too great stress cannot be laid. We all know what it means to get out of bed into a flood of brilliant cheer, and it is a great thing to have that cheer stay with one all day long, and day after day, week in and week out. The lack of it is very noticeable to one coming away from Colorado. It is a good deal like getting up at a hotel into a room on the court, one never knows what sort of a day it is. It affects one's spirits all day long. The air of Colorado is remarkably pure and dry. A collection of human beings always affects the quality of the air, and Colorado is wide. The dryness holds most anywhere in the state. It is a rare air, of an elevated region, and the barometric pressure is small. There is a moderate, very moderate, annual precipitation, and the drainage and the character of the soil favor soil dryness. There are about two hours of sunshine at Denver, on the first day of January, to one at Davos. Figures on all of these points have been presented to the profession again and again; they are accessible to any one, but the facts cannot be emphasized too often, in my opinion. Are these simple figures to be juggled with, as one turns a kaleidoscope? or do they hold a vital truth? There are those who say that in the cure of phthisis pulmonalis climate does not cut any figure, that change of climate is the thing; or rather that change of climate combined with suitable diet and regimen. These latter factors can be had almost anywhere, and undoubtedly do play a strong part in obtaining an arrest or cure of the disease, but one cannot get them on the Atlantic coast, or on the Pacific coast, either; or on the Lakes, or in most places. The Colorado air does not come bottled up like a table water, and if one wants it he will have to go after it. Beef-juice, eggs and milk, diet, drugs, brick buildings, etc., are to be had almost everywhere, but the peculiar combination of climatic factors, of which we have just spoken, has to be sought out, and I, for one, think that they are well worth the search.

It is possible to get some of them, separate from the others, at some other places. For instance, one can have sunshine, a dry soil and a pure air (when the wind is north, or northeast, right off of the water), for some of the winter months, at Nassau. But with it comes the additional facts that Nassau is far south, only a little over 25° north of the equator; that it is tropical in its climate; that it is depressing in its effects, and when the wind blows from the points to the south, and over the island, as it frequently does, it blows in a perfect horde of mosquitoes; that the water is cistern water, for Nassau is on a coral reef and the well-water is full of lime; and that the air may be pure, but it is frightfully humid. One would only go there, at the best, for a few months in the winter, to get away from the rigors of the winter further north, and instead of furs one would be wearing muslins, and be thoroughly uncomfortable at that. Nassau is depressing and does not tend to build one up. It is not the place, at all, for one looking for an arrest of this disease. Why bother about it? Some cases of fatty heart, some cases of Bright's disease, some with enfeebled circulation, from any cause; persons somewhat advanced in life, looking for equability of temperature and a moist skin, find Nassau, with its malachite sea and tropical foliage, very attractive. But for a young person looking for an arrest of consumption it is not to be considered for a moment.

A semi-tropical climate is that of southern California. It is neither as depressing as Nassau, nor nearly as invigorating as Colorado. The extreme south is about as far south as Charleston on the Atlantic coast. The climate partakes more nearly of that of the tropics. The palms, the eucalyptus, the pepper trees, are the chief foliage. In southern California proper, one does not run across the verdure to which we of the Temperate Zone are accustomed. An occasional beech is to be found in some of the cañons around Ventura. I well remember how grateful it was to me to find a large cluster of elms in front of the hotel at San José. Sitting in front of a blazing fire in the hills of Massachusetts, or trudging through the deep snows of a New York town, a winter spent amongst the roses or orange trees of southern California seems Elysium. It certainly is unaccustomed. But it must be remembered, for our purpose, that these luxuries are accompanied by *fogs*, dense and wet fogs, and that moisture of the air is very bad for the consumptive.

No one attempts to sit out of doors after sundown in southern California, and they do that in Nassau. It is not an unusual thing to find the asphalt around the hotel at Coronado quite black in the morning, from the moisture precipitated over night. In the morning the fog comes rolling in from the ocean, and it is frequently eleven o'clock before this bank of fog is cleared away so that the sun really shines. I recall that on our visit there, in 1902, one of our ex-presidents went around with an umbrella in his hand, prepared for rain. The old-timers did not carry theirs, they knew better.

We are told, in an article in our Transactions for 1904, that the writer witnessed a foggy spell of seventeen days' duration at Santa Barbara, in May and June of 1903, but he adds, "The fogs, being high, do not cause the deposit of so much moisture as one would expect from an eastern fog, or 'sea-turn.'" The writer on climate, in that charming little book, "Two Health Seekers in Southern California," says (page 142):

" Other consumptive patients find southern California entirely unsuited to their particular malady." As he has already practically eliminated hemorrhagic cases, the so-called catarrhal forms of pulmonary disease, the catarrhal phthisis of the older writers, the phthisis florida and the laryngeal phthisis, it does not leave much else for his group called " other consumptive patients." These two writers are residents of southern California. They are careful observers, and are telling what they see. Figures, too, show that there are over twice as many grains of moisture to the cubic foot of air in southern California as there are in Colorado. It is really a moist climate, and as such it is not suited to the consumptive in search of a cure.* It can be used and used wisely, too, for so many other conditions than consumption, that it should be given its just place by this Association. The roses are perfectly delightful; the climate is soft and soothing; the oranges we all know, but not in an orange-grove; it will stick in one's memory to sit by the gentle Pacific and hear the waves come in. Southern California is so charming, in so many ways, that there is no need of her claiming to be a panacea for everything.

It is claimed that the air of mid-ocean is remarkably pure, and one can sail the ocean blue in search of health. Having crossed the ocean between here and the British Isles eight times I can speak on that score, too. I am particularly fond of the water, and have had the good fortune to escape sea-sickness so far. I have experienced some pretty rough weather, too, and I have always enjoyed it. But however pure the air may be, I have found the vessel to seem cramped, and after a few days have longed to stretch my legs on shore. I have missed the babbling brook, the green meadows and the trees. I have wearied of looking over the rail at the gull or the porpoise. The milk and eggs do not seem altogether fresh. In one way or another I get tired of a vessel, and am glad to get ashore. It seems to me that this feeling would be intensified if one felt that he had to stay there, and moreover the ship diet would be a serious obstacle.

The hills of New England are unnecessarily severe for the invalid, and do not offer the inducements that one can get elsewhere. I cannot understand how the hills of New York can be much better.

It is argued against Colorado that it is not an all-year-round resort, that it is too severe there in winter; and to meet this objection, very largely, it has become the thing, of late, to send one's patients into New Mexico or Arizona for the winter months. This custom, it seems to me, is to be deprecated very much. I have rarely seen much good come of it. These are not the places in which the doctor, at home, wishes to put the patient; if for no other reason than that it is too hot by summer. In making the change back and forth, something amiss is likely to happen to the invalid, and one such fatal mistake costs so much.

Colorado is an all-year-round resort. That is just what it is. The arrest and cure of consumption is not a plant of hasty growth; in many cases it takes years. That state offers abundant opportunity for all the energies that any man can put forth. The danger is that the temptation may be too great. The temperature is not equable, I will admit it. I have thought this a point in Colorado's favor rather than against her. This freshness of the air is invigorating, it is stimulating, and the person seeking a cure is not seeking an opiate as well.

This brings up the point I wish to speak of, and in such a manner as to emphasize what I have to say. The arrest and cure of consumption requires courage, boldness. Is it an easy matter for the invalid to sleep out of doors, in the East, during our coldest winter weather? If the patient is not willing to make an effort to help himself, the attending physician has an almost hopeless task ahead. It is like a drowning man saying, " I will drown and nobody shall help me."

Another objection that is raised is not supported by figures. Colorado is frequently spoken of as being " windy." A careful investigation of statistics, furnished by the Weather Bureau, shows that the average daily velocity of the wind, in Denver, for a period of ten years, was much less than that of Philadelphia or New York, and that it was 85 miles less than that of Chicago and 101 less than that of Boston for the same time.

The question of atmospheric electricity I do not understand. I do know, however, that the air of Colorado is charged with this electricity, and that in the winter time it is very much in evidence. The clothing will snap, at night, as though one had rubbed across the carpet, in order to produce it.

Solly says that the tendency to hemorrhage is lessened in a high climate. Be that as it may, Reed, of Colorado Springs, pointed out to the State Medical Society, that hemorrhagic cases did well in the high altitude of Colorado. My own experience, and that of others, would tend to confirm this statement, very decidedly; *i. e.*, altitude *per se* is not a producer of hemorrhage of the lungs.

Quite a number of cases of laryngeal phthisis have been known to have been arrested. I had them in my own practice, and others did in theirs. Of course the ulcer left a cicatrice on the cord and the voice was affected. But the ulcer was healed, and loud and sustained speech was the rule. I have known this recovery, if it can be called a recovery, to last for years.

In regard to a return East to live, after a recovery obtained in Colorado, many persons fear, or say they fear, that, if they go to Colorado at all, they will always have to stay there. " Once in Colorado always in Colorado," they say. Even if that were so, which it is not, many a worse thing might happen. As has frequently been pointed out, Colorado will fully occupy any energy

* Hermann Weber says, " Another idea, that equable climates are the best in the treatment of phthisis, should likewise (in addition to a warm climate) be much restricted."

that one may see fit to give her, and she is capable of giving large return on all such ventures. Our Dr. Knight, for whom we hold the deepest affection, and whose judgment is so universally admired, put himself on record, on this point, way back in 1891, when he said before this Association, "I feel sure that patients cured in Colorado need not all remain there." My own belief is shown by my action. This principle is well established now, by many and indisputable cases. They occur in practice after practice. It is a good plan, however, not to swap horses while crossing a stream, and to make reasonably sure before trying any experiments.

This brings me face to face with a consideration of the so-called "home treatment." There is not one of us, I think, but would put himself in the best condition possible to overcome this disease, if he felt certain that he had it. He would take the best steps he could, all things being considered, and that right away. He would not fondle the disease. He would not play with the fire, but would take the most active steps to put it out. The best would be none too good for him. Why should he not do the same by his patients? Early diagnosis, and fresh air, combined with food, can do wonders, even at home. It seems wise to me to take every step, and that early and not as a last resort. The alternative is death, of a horrible kind. Why play with it? The question of what to do after recovery can wait. First secure the recovery. Don't ponder about getting there before the doors are closed, but go. Colorado may rule you out, instead of your ruling her out, and her help is needed.

This means, of course, that Colorado climate must be used properly. It is not enough to simply get there, and then, metaphorically, draw a razor over one's throat by doing all sorts of imprudent things which would not be entertained for a moment at home. But the climate, rationally used, is a great aid to the arrest and cure of most forms of phthisis. Experience has shown this to be true, in thousands upon thousands of cases. It is not every case that even then secures a recovery. Many die. Just so with antitoxin, the mortality is greatly diminished under its proper use, but patients still die of diphtheria. If you have phthisis pulmonalis you will, if you are wise, take every step you can to stamp it out, to make your own calling and election sure.

A STUDY OF SEVEN HUNDRED AND FIFTY FRACTURES OF LONG BONES OF THE LOWER EXTREMITY, WITH SPECIAL REFERENCE TO THE CAUSE OF DELAYED UNION.

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THROUGH the courtesy of the Trustees and Surgical Staff of the Boston City Hospital I was permitted to examine the hospital records in the preparation of this paper.

This series of cases was taken from the surgical records of the Boston City Hospital from 1890 to 1900. Fractures of the femur, of the tibia alone, and of the tibia and fibula together were taken. Fractures through the neck or condyles of the femur and through the heads or malleoli of the tibia and fibula were not included. Simple fractures of the shafts of the bones were the only ones studied. No compound fractures were considered.

For the purposes of this paper all fractures which did not unite within the normal limits were regarded as cases of delayed union, no distinction being made between delayed union and non-union.

This series comprises 281 fractures of the femur, 136 fractures of the tibia and 333 fractures of both tibia and fibula.

FRACTURES OF THE FEMUR.

There were 281 of these fractures in 276 patients, 217 of whom were males and 59 females. Five patients had both femora broken. The right femur was broken in 150 cases and the left in 131.

The fractures occurred at all ages. The youngest patient was eight months old and the oldest eighty-three years. The frequency of these fractures in youth is shown by the fact that 38% were in patients under ten years of age and 50% were under twenty years. Twelve per cent of the patients were over fifty years of age.

The majority of the fractures were through the middle portion of the bone, that is, 32% were at the middle, 33% at the junction of the middle and lower thirds and 23% at the junction of the middle and upper thirds, leaving only 7% through the upper third and 5% through the lower third. There were no fractures through the upper third of the femur in patients under ten years of age, and only 2 in those under twenty years. In the first five decades the majority of the fractures were at the middle of the femur or below, while after fifty years of age there were nearly twice as many fractures above the middle as below it, showing a tendency for the high fractures to occur in older people.

Eighty-three per cent of all the cases were solidly united within nine weeks, 4% left the hospital in less than 9 weeks and before the fractures were solid; 1% died shortly after entrance, 1% were operated upon for delay in union, and 11% required ten weeks or more for solid union to take place.

Forty-four per cent of the fractures which were solidly united within nine weeks were in patients under ten years of age, while of the cases requiring more than ten weeks for solid union only 6% were under ten years; but there were 7 patients over seventy years of age, and in each one of these the fracture was solidly united within nine weeks. Ninety-seven per cent of the fractures in patients under ten years of age were solidly united within seven weeks. Apparently fractures of the femur in children unite readily, but old age does not prevent union within the normal limits.

The following cases were found in the patients who were suffering from constitutional disease:

1. Rachitis, 5 cases, solid union took place in three, four, six, seven and fourteen weeks respectively. The patient whose fracture required fourteen weeks to unite was very poorly nourished.

2. Mitral disease with good compensation, 2 cases, one of which united solidly in six weeks and the other, which is described later, was operated upon for delayed union.

3. Marked arterio-sclerosis, 1 case, solid union took place in six weeks.

4. Malaria, 1 case, solidly united in six weeks.

5. Epilepsy, 1 case union solid in seven weeks.

6. Advanced sarcoma of breast and groin, 1 case, union solid in eight weeks.

7. Tuberculosis, 2 cases.

(*a*) Pulmonary tuberculosis, sixty-nine years of age, union solid in ten weeks.

(*b*) Sub-acute hip disease, solid union in nine weeks.

8. Fragilitas ossium, 1 case, union solid in nine weeks.

9. Diabetes, 1 case, solid union in nine weeks.

In looking for local causes as interposition of soft parts, comminution, poor apposition, and overriding of fragments and obliquity of fractures which might delay union, it was found that of the fractures which united solidly in nine weeks or less 14% were oblique fractures with overriding of the fragments; but of the fractures which required ten weeks or more to unite solidly 40% were oblique with overriding, and in some cases comminution of the fragments. The end results showed that in 4% of the former class there was some slight resulting deformity, and in 23% of the latter class it had been impossible to accurately approximate the fragments. This showed a tendency for the cases in which approximation of fragments was difficult to require more time for solid union to take place.

The following cases, three in number, would seem to strengthen this opinion:

1. Male, sixty-seven, an oblique fracture in the upper third of the femur. The limb was put up on an inclined plane with extension, and later in a Buck's extension. At the end of twenty-four weeks there was a shortening of 3 inches and union was only moderately firm.

2. Male, thirty, an oblique fracture of the femur in the lower third. The limb was put on a double inclined plane and later in a Buck's extension. At the end of eighteen weeks there were 1½ inches shortening, and some mobility at the seat of fracture.

3. Male, sixty-three, an oblique fracture in the upper third of the femur. The limb was put on an inclined plane, with extension. At the end of nine weeks there was overriding of the fragments, and mobility at the seat of fracture. At the end of sixteen weeks there was considerable mobility and moderate deformity. In these 3 cases repeated attempts were made to overcome the shortening and approximate the fragments, but without success.

Three patients were operated upon because of delay in union.

1. Male, five years of age, in excellent physical condition, fractured his left femur in the middle third. Abnormal mobility and shortening were present, but no crepitus could be obtained on manipulation of the fragments. The limb was kept in a Buck's extension for two months, when a plaster of Paris spica was applied for one month, but no union took place. The fracture was then cut down upon, and the end of the upper fragment was found encapsulated in muscular tissue, and separated from the lower fragment by considerable fibrous and muscular tissue.

2. Female, fifty-four, very stout, fractured her femur at the junction of the middle and lower thirds. There was much deformity and mobility in all directions, but no crepitus could be obtained. The limb was put in a Buck's extension, later in a plaster spica, and later still in a Buck's extension. At the end of twenty-two weeks there was free mobility at the seat of fracture. Operation showed the fragments overlapping 2 inches, with soft parts between.

3. Male, sixty-two, in good physical condition, fractured left femur at the junction of the middle and lower thirds. There was free mobility in all directions, the lower end of the upper fragment nearly penetrating the skin. The limb was put in a Buck's extension, but at the end of two months there was no union. Operation at that time showed that the upper fragment had transfixed a portion of muscle. The ends of the fragments were freshened and approximated without wiring. Union did not take place, and nine months later a second operation showed the fragments overlapping two inches, and without callus. The ends were freshened again and wired. The bone was solidly united in three and one-half months. This patient received a fracture of the radius at the same time that his femur was broken, but it united without delay.

The interposition of soft parts and imperfect approximation was responsible for the delay in these fractures.

Alcoholism had no apparent effect on union of fractures of the femur.

FRACTURES OF THE TIBIA.

There were 136 fractures of the tibia, 112 males and 24 females; 66 of the right tibia and 70 of the left. Forty-three per cent of the patients were under twenty years of age, 48% were between twenty and fifty years, and 9% were over fifty years; 94% of the fractures were at the middle of the tibia or below; that is, 24% were at the middle, 42% at the junction of the middle and lower thirds, and 28% through the lower third.

All the fractures above the middle of the bone were in patients over twenty years of age.

One hundred and twenty-three patients were under observation until solid union took place, 9 were discharged within five weeks without having become solidly united, 2 fractures were under observation for sixteen weeks without uniting solidly, and 2 patients died a few days after entering the hospital, one of shock and the other of delirium tremens. In no case was an operation for delayed union made.

Eighty-two per cent of these fractures were solidly united within seven weeks, and 9% required from eight to thirteen weeks for solid union to take place. The remaining 9% included patients who were lost sight of, 2 who died and 2 whose fractures were not solid at the end of nine and sixteen weeks respectively.

Twenty-eight per cent of the fractures which united solidly within seven weeks were in patients under ten years of age. In fact, all those in patients under ten years old were solid in five weeks or less. Of the fractures requiring from eight to thirteen weeks for solid union to take place, all but one were over twenty years of age. There were five patients over sixty years of age, and in four of these the bones were solidly united within seven weeks. One fracture in a patient of eighty-two years was solid in five weeks.

CONSTITUTIONAL DISEASES.

Two patients with fractured tibiæ were suffering from chronic nephritis. One of these fractures united solidly in six weeks and the other, showing no union at the end of four weeks, was given potassium iodide for suspected syphilis. His fracture united solidly in twelve weeks.

Alcoholism had no apparent influence on the union of these fractures.

LOCAL CAUSES.

Of 111 fractures which were solidly united within six weeks, in 12% special reference was made to their obliquity and deformity. In 107 of these cases, 96%, good alignment and approximation of the fragments was obtained, and in the remaining 4 cases the resulting deformity was only slight.

Of the 12 fractures which required from eight to thirteen weeks to become solidly united, 4 were oblique with considerable deformity, and two of these were comminuted. No one of these 4 cases was without deformity when union was solid. The other cases showed no apparent reason for delay.

FRACTURES OF THE TIBIA AND FIBULA.

There were 333 fractures of the tibia and fibula together, 82% of which were in males and 18% in females.

Fifty-five per cent of these fractures were of the right leg and 45% were of the left.

The fractures occurred at all ages, but were comparatively rare in children, 7% occurring in the first and second decades respectively. Seventy-one per cent of the fractures were in patients between twenty and fifty years of age and 15% of the patients were over sixty years of age.

Fractures of this class showed a marked tendency to take place in the lower half of the bones, 84 per cent being located at or below the middle. In 10% of the cases the bones were broken at different planes. There were 5 cases in which the tibia was broken in two places, 5 cases in which the fibula was broken in 2 places, and in 1 case there were 2 distinct fractures of each bone.

Two hundred and ninety-two fractures were under observation until solid union took place, the time required varying from three to thirty-eight weeks. Twenty-three patients were discharged within four weeks of the time of fracture and lost sight of. Twelve fractures were observed for more than nine weeks, without uniting solidly, 2 were operated upon for delayed union, and 4 patients died, all of delirium tremens, within eleven days of the time of fracture.

Seventy-eight per cent of the cases which were observed until solid union took place united solidly within nine weeks, while 12% required over eleven weeks to become solidly united.

There were 23 patients under ten years of age, all of whose fractures were solid within eight weeks. There were 237 fractures in patients from twenty to fifty years of age, and sixty-six per cent of these were solidly united within nine weeks. There were 7 patients over seventy years of age. Five of these fractures were solid within nine weeks, 1 patient died eleven days after his accident and in one the union was delayed.

In looking for constitutional diseases accompanying these fractures, the following were noted:

1. Tubercular disease of vertebra, 1 case. A boy ten years of age, fracture solid in four weeks.

2. Syphilis, 2 cases: (*a*) A man, twenty-nine years of age, fracture solid in seven weeks. (*b*) A man thirty-eight years of age, fracture solid in nine weeks.

3. Multiple spinal sclerosis, following syphilis, 1 case. A man, twenty-four years of age, fracture solid in 8 weeks.

4. Tabes dorsalis, 4 cases: (*a*) A man, fifty-two years of age, tabes of seven years' standing, fracture firm, but not absolutely solid at the end of five weeks, at which time trace of him was lost. (*b*) A man, fifty-five years of age, with an uncomplicated fracture, had solid union in nine weeks. (*c*) A man, sixty-five years of age, with a definite syphilitic history, had an oblique fracture, with overriding of the fragments. The end of one of the fragments sloughed through a leg ulcer at the end of seven weeks, and union was solid in sixteen weeks, but position of fragments was not good. (*d*) A woman, forty-six years of age, with tabes for ten years, had an oblique fracture with overriding of the fragments, union was solid in twenty weeks. The position of the fragments in this case was good.

In considering the local conditions which might delay union, it was found that 20% of the cases which united solidly within eight weeks were mentioned as being oblique fractures with overriding of the fragments, and the end results showed that in 92% good approximation of the fragments had been obtained. Sixty-seven per cent of the fractures which united in from nine to eleven weeks were oblique with overriding, and 84% were in good position when solidly united.

Of the cases which required from twelve to thirty-eight weeks for solid union to take place, 83% were oblique, with overriding of the fragments, and in only 62% had it been possible to obtain an accurate approximation of the fragments.

Of the cases which were under observation for more than eight weeks, without becoming solidly united, 89% were oblique fractures with overriding of the fragments. At the time of discharge, in only 39% had good alignment and approximation of the fragments been obtained.

Apparently, as the time required for solid union

to take place increased, the percentage of fractures which were oblique, with overriding, and hence more difficult to hold in good position, increased; while at the same time there was a decrease in the percentage of good anatomical results. That is, fractures in which there was difficulty in getting a good approximation of the fragments, and these would naturally be the oblique fractures with overriding of the fragments, were the ones which, as a rule, required the longest time to become solidly united. There were two cases which are of interest in this connection.

In one case the left femur was fractured obliquely at the junction of the middle and lower thirds and the tibia and fibula of the same leg were broken in the lower third, no mention being made of obliquity in the latter fracture. The tibia and fibula united firmly in nine weeks and the femur required thirteen weeks for solid union to take place.

In the other case both bones of the left leg were broken at the junction of the middle and lower thirds. The fracture was oblique and comminuted. The right tibia was broken at the middle. The right tibia united firmly in five weeks, while twelve weeks were required for the fracture of both bones to become solidly united.

The location of the fractures apparently had no influence on the time required for solid union to take place.

Two patients were operated upon for delay in the union of the fracture.

1. A man, twenty-seven years of age, had an oblique fracture of both bones at the junction of the middle and lower thirds, with much deformity and overriding of the fragments, and considerable destruction of soft parts. At the end of twenty-eight weeks the fracture was still movable. Operation showed that the fragments were overlapping with soft parts interposed. There was some fibrous union.

2. A man, twenty-five years of age, had a fracture of both bones of the leg at about the middle. The fracture was oblique and there was considerable overriding of the fragments. At the end of twenty-one weeks there was still abnormal mobility at the point of fracture. Operation showed overriding of fragments with interposition of soft parts.

The cause of delayed union in each of these cases was evidently the interposition of soft parts between the fragments.

Some of the conclusions which may be drawn from the foregoing series of cases are:

1. In fractures of the long bones of the leg the proportion of males to females is about 4 to 1.

2. Fractures of the right leg are only slightly more frequent than of the left.

3. Fractures of the femur are proportionately more frequent in children than in adults.

4. High fractures in any of these three bones are rare in children under ten years of age, but are found in adults past middle age.

5. Fractures in children unite readily, and old age of itself is not a cause of delayed union.

6. The majority of fractures in which union is delayed are of the oblique or comminuted variety.

7. In the great majority of cases, delay in union is due to local causes, such as interposition of muscular tissue between the fragments, or faulty approximation of fragments.

8. Constitutional diseases rarely cause delay in union, but certain fractures, for some unknown reason, fail to unite, although the approximation is accurate and no constitutional disease is present.

Practically all who have written on this subject are agreed that local conditions, as interposition of soft parts, imperfect approximation of fragments, imperfect immobilization, etc., will delay or prevent union of fractures, but opinions differ as to what extent constitutional diseases will influence union.

Bernays says, "All cases of non-union which are not cured by proper approximation and immobilization are incurable, and are due to some unknown cause, or to some of the well-known constitutional vices, such as the different forms of malnutrition, cachexia and debility."

Bennett: "Fractures in persons who follow trades in which they handle lead, as painters, are apt to have delayed union." Birdsall recognizes both constitutional and local causes, and says, "The provisional callus is much greater where the bone is surrounded and well covered with muscular tissue. At least one third of the surface of the tibia has no muscular covering, therefore the fact that so large a surface of the tibia is subcutaneous is not an unimportant factor in delayed union."

Cheyne mentions the usual local causes, but thinks that alcoholism may distinctly retard union after fracture, that specific fevers during the progress of the case cause delay, and that when the fracture is in a rachitic patient, an abundant callus is thrown out, but normal ossification does not take place. He believes that general debility, old age and paralysis will cause delay in union.

Dunn thinks that in cases in which local and constitutional causes are not present, apparently the bone forming power of the cells is inhibited from some unknown cause.

Fisher, among other causes, mentions deficient blood supply due to relation of the fracture to the nutrient artery. Girdner says, "In cases of general paresis, non-union or soft fibrous union is the rule, and firm, bony union the rare exception." Park says that simple, delayed union may be caused by shock, old age, rachitis, gestation, lactation, scorbutus, syphilis, cancer, paralysis and local unrest; and that non-union may be due to the above causes or to faulty fixation and interposition of soft parts.

Exophthalmic goiter is given as the cause of delayed union in a fractured humerus, by White.

Pilcher leans toward the side of constitutional causes and thinks imperfect immobilization is not a cause of delayed union.

Snévé says syphilis does not cause delayed union unless the bone itself is the seat of the disease, old age and pregnancy are not factors, and that non-union is wholly and entirely a trophic matter dependent upon injuries to the nervous supply of bones.

Adams reports four cases operated upon for non-union. He considers "general lack of nourishment to the parts resulting from age" as the cause of non-union of a fractured femur in a man sixty-five years of age. The other three cases were due to local causes. Carothers thinks fibrous union is most likely to occur where immobilization is difficult, or neglected in treatment, while Callender says, "I have never seen the union of an ordinary fracture prevented by age. Even paralytic old people repair a fracture rapidly." Again he says that pregnancy, debility, paralysis and syphilis are no obstacle to the repair of fractures, and that all the cases of non-union of the bones of the leg which had been under his notice were instances of oblique fracture.

Fowler thinks alcohol does not interfere seriously with union, that the cause is usually local, and in certain cases no rational explanation can be given.

Oppenheim, quoted by Hartshorne, says that general cancerous conditions and syphilis do not retard union.

Senn thinks that old age and injury to the nutrient artery have no influence in determining non-union.

Murray, after a study of 76 fractures of the tibia and fibula, concluded that oblique fractures caused more displacement, lacerated the soft tissues and required longer to unite.

Stimson sums up the question as follows: "Certain general conditions have been deemed a cause of delay or failure of union, either through a specific poison as syphilis, or through deterioration of the health or a lowering of the vitality induced by them, as pregnancy, lactation, defective nourishment and acute diseases; but it is beyond question that the causes are usually local and that the most common one is a faulty relation of the fragments to each other, including therein the interposition between them of muscular tissue. Other causes are defective innervation, diseases of the bone, inflammation on the surface and defective treatment. It is also true that delay and even failure may occur, when no local or general cause can be found, when the fragments are in exact apposition and when the general condition is good."

The following tables may prove of interest:

Fractures of Tibiæ. Time of Solid Union in Decades.

Solid in weeks. Age.	2.	3.	4.	5.	6.	7.	8–13.	Total.
1–9 yrs.,	3	9	9	10				31
10–19 „		1	14	9	1	3	1	29
20–29 „		1	9	2	4	3	2	21
30–39 „			4	5	4	2	5	20
40–49 „		1	2	2	2	4	2	13
50–59 „				1	2		1	4
60–69 „				1	1		1	3
70–79 „						1		1
80–89 „				1				1
Total cases,	3	12	38	31	14	13	12	123

Femora. Time of Solid Union in Decades.

Weeks. Age.	3.	4.	5.	6.	7.	8.	9.	10–24.	Total.
1–9 yrs.,	4	20	36	21	17	3	1	2	104
10–19 „			7	10	9	2	2	4	34
20–29 „		1	1	5	12	5	6	9	39
30–39 „		1	2	6	12	4	3	8	36
40–49 „			2	5	6	4	4	3	24
50–59 „				2	4	3	1	2	12
60–69 „			1		2	2	1	3	9
70–79 „				1	1	1	2		5
80–89 „							1		1
Total,	4	22	49	50	63	24	21	31	264

Location in Decades — Tibiæ.

Age.	1–9.	10–19.	20–29.	30–39.	40–49.	50–59.	60–69.	70+.	Total.
Upper third,							1	1	2
Middle and upper third,			3		2	1			6
Middle third,	9	8	6	4	2	2	2		33
Middle and lower third,	17	19	9	9	2	1			57
Lower third,	2	4	6	13	9	2	1	1	38
Total,	28	31	24	26	15	6	4	2	136

Fractures both Bones of Leg — Location in Decades.

Age.	1–9.	10–19.	20–29.	30–39.	40–49.	50–59.	60–69.	70–79.	Totals.
Upper third,			1			2	2		5
Middle and upper third,		1	1	6	4	3		1	16
Middle third,	12	6	15	18	8		4	2	65
Middle and lower third,	6	8	25	40	19	13	2		113
Lower third,	4	6	23	26	20	14	3	4	100
Not in same plane,	2		9	8	10	3	2		34
Total,	24	21	74	98	61	35	13	7	333

In 10 of above cases tibia or fibula was broken twice.

Fractures of Femur — Location in Decades.

Age.	1–9.	10–19.	20–29.	30–39.	40–49.	50–59.	60–69.	70–79.	80–89.	Totals.
Upper third,		2	1	4	3	1	6	2		19
Middle and upper third,	27	6	8	9	3	8		3		64
Middle third,	49	11	12	9	7	1	1	1		91
Middle and lower third,	29	12	20	13	7	3	4	3	1	92
Lower third,	1	4		3	5	1	1			15
Total,	106	35	41	38	25	14	12	9	1	281

TIBIÆ AND FIBULÆ — TIME OF SOLID UNION IN DECADES.

	Weeks.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	18.	20.	21.	33.	38.	Total.
Age	1– 9 yrs.,	2	4	5	7	2	1	2														23
	10–19 ,,			2	7	5	2	1	2													19
	20–29 ,,		2	3	8	12	8	16	5	4	3		2	1	1	1		1			1	68
	30–39 ,,		1	7	7	14	17	13	7	6	5	3	1	2	2	2			1			88
	40–49 ,,			2	4	7	8	12	5	3	2	2	1	1	1	1		1	1	1		52
	50–59 ,,			2	1	3	5	4	2	3	1	2		1	1	1	1					27
	60–69 ,,				1	1		4	1	2		1										10
	70–79 ,,				1	2		1	1													5
	Total,	2	7	21	36	46	41	53	23	18	11	8	4	5	5	5	1	2	2	1	1	292

HABIT CURE, MENTAL AND PHYSICAL.

BY JOHN WARREN ACHORN, M.D., BOSTON.

HERE is a commonsense problem for solution: A child at birth should have healthy automatic instincts, — for yelling, kicking, nursing. These come without rhyme or reason, unconsciously, except for those who have to listen to them. A child apes those about him and soon gathers, during the formative years, a basketfull of habits, aside from involuntary practices. Later on other factors mix with the development and play a part in the evolution. Finally the child is made up of a batch of consciously or unconsciously acquired habits, mental and physical, good and bad, which he controls in part and in part surrenders to according to the understanding he has and the beginning character he possesses, depending mainly upon mother teachings. Equipped, then, according to instincts, temperament, inheritances, parents, playmates, surroundings and education, he graduates finally into the world's arena.

If the first thought-impulses that traverse the wilderness of a child's mind are disturbed by parental anger, nagging criticism or other discipline irrational in character, the chances are that distrust of self will develop in the child. An initial thought or impulse, like a trail through the wilderness, should be laid down as nearly right as possible. Thoughts, like explorers, are prone to follow a "blazed trail" instead of swamping out a new and better one, even if it is known to be poor. It is this spirit of nagging criticism, so prevalent in New England in past time, in the case of children, during the vital formative years, that is responsible for many failures and much unhappiness in mature minds even. Children can be taught the fundamentals, — honesty, love, loyalty, appreciation, reverence, patriotism, work and play, without being made the victims of a guilty conscience, — right or wrong, you're wrong, is one way of defining it. Praise of the right sort acts as a nerve tonic; it is constructive, while adverse criticism stunts growth and fosters morbid mental impulses. A child should never be nagged until the burden of his formative day, through worry, distrust or other cause, is dragged into the night. Every morning he should be taught to start afresh, and when the sun goes down, that day for him should end, — it is past experience. This way of doing might be practised by everybody; the night is a poor time in which to criticize one's self for the imperfections of a day that is done; it is a poor time in which to do business, properly the work of the day.

We are privileged to use past experience as a guide to the future, but it is not to be looked back upon with regret. Looking backward fosters introspection and retrospection, both bad habits of mind; it fosters worry, the guilty conscience habit, and that of turning night into day, with consequent loss of nervous force from loss of sleep. If children, or any of us, for that matter, were made perfect in the beginning, we should have nothing in this world to do *really* worth working for. We should never willingly surrender any experiences of life; they make us what we finally become, a reflection of the best there is in us. Every expression line in our faces is an indication of self-building or self-denial in some direction, or should be. We are respected and loved by those about us as we grow older, because we have made a winning fight. The whole question is one of character building, or becoming one's own master, of finding one's self.

As the result of our training or lack of it most of us have come to be afflicted with physical and mental habits, which breed functional disorders, the persistence of which makes every-day life and living more or less of a nightmare.

For mental faults we have fear, false pride, over-sensitiveness, selfishness, envy, avarice, introspection, retrospection, obstinacy, loss of temper, jealousy, worry, hurry, — often due to procrastination, — hysteria and insomnia, along with many others. For physical faults, we have gross habits of eating, eating hurriedly, tea and coffee drinking to excess, neglect of regular bodily habits essential to health, neglect of sleep at the right time and in the right amount, surrendering to physical passions and desires known to be morally, if not physically, detrimental to health, or one's sense of well being, lack of cleanliness, alcoholism, the tobacco habit and many others. The one set has its habitat "above the ears," the other set "below the necktie," but they are one and the same thing, they are all habits or weaknesses due to our mental or moral make-up, vacillating or strong as the case may be, but they are all manageable or curable, provided the victim is not a degenerate, and has character enough to "nail to," or is willing to "hustle" for character. The cure is applied common sense simply, and the cultivation of one's power of resistance, until the mind and not the habit, whether mental habit or physical habit, is master.

Let us regard the thinking mind as a thin plate covering the floor of the brain just above the eyes. Above this plate worry, fear, anger, insomnia and the like have their habitat; they are

the "rowdies of the mind" in the attic of the brain, who, by their unruly actions, keep up such a disturbance that the better habits, peacefully disposed in the rooms about, cannot work to the best advantage to generate impulses or forces that are constructive, elevating, or spiritual. Below this mind plate are the body habits. We will locate them "below the necktie," for the sake of attaching them to the body itself. Gross eating, hurried eating, tobacco chewing, candy eating, liquor drinking to excess, physical negligence and immorality, belong to this class of body habits.

People who are mentally and physically miserable, but suffering from no organic or infectious disease, often know why they are miserable, but they seldom make an unaided attempt at a cure, — such is the hold habit has upon them; and they do not voluntarily confess the fault or the cause, either to themselves or another, unless invited to do so, as at a confessional. The first essential to the cure of any habit is a willing mind. Will any one admit he hasn't character enough developed, in the course of a lifetime, perhaps, to conquer a habit, if it detracts from his usefulness, his happiness, or the comfort of those with whom he lives? If the habit is mental, a "rowdy in the attic of the brain," the mind of the sufferer is to be turned up; or if the habit is one of indigestion due to beans eaten at bedtime by a man over seventy, the mind of the victim must be turned down. The habits of childhood are all abandoned, as the years go by, such as playing tag, sliding knee-fashion on a sled, one and all except the habit of eating. Candy eating, for instance, properly goes with quick digestion and the activities of childhood; it is often persisted in to old age, greatly to the physical detriment of the individual who declines to relinquish the habit. The food that digests well at twenty is not necessarily the food that fits best at sixty, and yet who interests himself to find this out? Food, like everything else, should be changed or modified with advancing years, to meet the physical needs incident to lessening activities, both physical and mental. We eat, or should eat, only what is required to keep the blood pure and bright, for the blood goes everywhere and nourishes all the tissues. When food is properly eaten, less is required and the stored-up nervous force is not wasted getting rid of it. The system relieved of this burden of excessive food saves an amount of energy equal possibly to that used by the brain in its daily round of work, while the increased amount of mental vigor that follows the use of food up to what is physiologically required, but not beyond it, is sufficient proof of the nervous force otherwise dissipated in this way. Proof of this is within the reach of every one who cares to demonstrate it. The extra strain imposed upon the human machine, from over-indulgence, must wear it out years ahead of its time. The assimilation of too much food renders the blood current impure; these impurities clog the connective tissues everywhere and cause many of those chronic disorders from which people of mature years suffer. The better assimilation of properly masticated food, which is the first essential, in just the amount required, maintains the blood in its purity at its highest nutritional standard. Lust for food satisfies the baser instincts only. It stimulates sensuality, the inferior passions and desires, and robs man of his spirituality. Animal force in a flight of oratory may win the applause of the multitude, but never the hearts of the people. A mind "crowned" with over-eating may capture a city, but not the man at the head of the procession. If spirituality is one of the things needed in this world to offset its "splendid materialism," food properly eaten, thoroughly dissolved by the teeth and tongue before it is swallowed, is one way of gaining some of it. Plain living and high thinking work well under the same yoke. Perhaps the secret of longevity, sought for in fabled springs and patent elixirs, lies hidden in the proper utilization of our every-day foods, in marriage founded upon health as well as sentiment, coupled with moderation in all things.

Turning to the habit above the mind plate, let us discuss worry. Every one knows, or should know, that this is a form of nervousness, a mental condition and not a physical problem. It has no substance in fact and cannot be reached by drugs. The cultivation of a better habit is the only cure, and persistence in the attempt the only safeguard. There is no question but worry greatly impairs the physical well-being; it retards digestion and prevents natural sleep. During sleep is the only time when the nervous system is repaired; food when properly eaten and digested furnishes the material for repair. Yet worry or undue solicitude is classed below fear, which is defined as a painful emotion. Hypochondria is even more pitiful than worry; it is defined as "belief in a serious disease." The person who wills, wins; the person who *tries*, presupposes that he is going to fail. The *will* to do a thing has faith for a companion, while trying to do a thing has failure for a mate. It is good practice never to face a worry. If this worry is represented by some one in anger, turn on the heel and walk away; if it is in the mind, a happy thought, if possible, should be substituted for the ugly one. With practice this can be done. A happy experience, a fascinating story, a sentiment that appeals to the higher intellectual faculties, a short walk, the companionship of some one for a time whose moral courage fosters one's own, these and other resources within the reach of every individual, however humble, if cultivated, will serve as deliverers from this harpy or "rowdy of the mind," or any of the other habits mentioned, for that matter. At first breaking away from habit is difficult, because the mind doesn't respond to the feeble cry of the better impulse for recognition, the older habit being the stronger and much more readily started; but in the face of persistent patience the bad habit gradually weakens and finally the better one registers first on the dial of impulse, with sufficient force to maintain the balance of power, when the old habit, like a prairie coyote, slinks out of sight,

and wonder lingers entranced that such a weakness could ever have existed. These harpies of the mind often return to roost in their old accustomed places or on some other piece of mental bric-a-brac. Gun for them, persist in winging them, and in time they will all be bagged and the mind cleared; this is often a task, but it is a feasible one. However much these birds may fly over our heads we must not let them build nests in our hats. The thought that flits does no harm, the thought that sticks does harm.

All New England says, " he don't," instead of he doesn't. This is an error in grammar, a matter of habit. If any one having this fault of speceh and desiring to be rid of it will say, " he doesn't "; twenty times a day, and get some friend to tell him when the " he dont's " are numerous, if he will repeat a sentence with " he doesn't " in it frequently, and put a printed " he doesn't " on a slip of paper, where he can see it on his desk, or in front of his dinner plate, after a time the " he doesn't " gets into the memory of the mind and the " he don't " gets out. Finally, the " he doesn't " in every sentence in which it should appear will be seen in advance of the " he don't "; as the words come romping along to form a sentence, the " he doesn't " takes its place and the fight is won. Oblivion settles over the old way, and grammar may be seen walking down the avenue of thought and expression on the right arm of memory, not on the left. This correction illustrates how one can make a new road, or better one, through the brain in place of the old trail so long used, since childhood probably.

A man suffering from insomnia will often establish this fact in his anatomy by sitting up regularly half the night; or, perhaps, about sunset he begins to say, " I can't sleep," and then keeps on vaccinating himself with this idea until saturated with it. Of course he knows he can't, he has been telling himself this for ten years, and he lies awake to prove it. Let him begin by saying, " I shall sleep "; let him say it forty times a day, — say it until the memory of " I can't sleep " fades and the affirmation " I shall sleep " takes its place. This comes about gradually, but finally the body of the person who *can* sleep, because he says he will, begins to relax, and impulses of a soothing, constructive character begin to travel the strained and dessicated nerves. Let the person suffering from insomina go to bed early. He is not to try to sleep. Sleep always runs away if chased; it is another prairie coyote if ever there be one. Mark Twain once said " that the coyotes he chased looked like gray streaks going, and they left a hole in the air where they whipped through." The person afflicted should remain indifferent to the question of sleep, after retiring. Those who have faith can help themselves by asking God to help them, — he surely will. It is certainly a comfort to have some higher power to which to appeal. One man, cured, prayed to his wife; she had been dead two years, and he had suffered from insomnia fifteen years. He loved and idealized her more than anything else; he was told she was not far away, that she simply had gone to join the Great Force that sent her here and had taken her away; if he prayed to her, he prayed to God who stood beside her listening. The influence of loved ones who have passed on never grows less with the living. The influence of every good mother is greater as her children, men and women, advanced in years, grow to appreciate the beauty of her life character. The only physical request made of this reluctant sleeper was, that he should take his every-day mind and hold his body still in bed with it, and not turn and twist as he had been accustomed to do; he was told that in time his mind would become positive instead of negative, and when his body relaxed, under the influence of affirmative auto-suggestion and positive memorization, with God's help, he would sleep. In six weeks he slept.

By various means and for various reasons, individuals will overcome any habit they decide to conquer, for all persons are not equally spiritual; but all seem to require some guiding purpose or inspiration. Love of children, faith in the advice of a friend, faith in the advice of a physican or of the minister, pride of the right sort, ambition, love of family,— these are the moving causes in many cases; then there is the desire to avoid sickness related to the persistence in some bad habit, or the desire with some to have nothing in their lives that might not be known, that might not be a universal law for all men to follow; and finally, and, best of all, there is the spiritual desire, by far the most potent, — for spirituality carries real faith with it and faith cures almost anything except organic and infectious diseases of a serious nature, while it goes far towards helping to heal some of these. One should cultivate his powers of resistance by any decent or ideal means until he has established right ways of thinking and acting in the place of wrong, and has such habits of body that both the mind and the body become healthy and remain so.

Concentration is one of the things required for the cure of any habit, as well as patient practice and a willing mind. Mental discipline or the ability to concentrate the faculties is what we should get in school or college; experience or real education is what we gain in the world at large. Concentration of mind is the thing that ails a fellow when he falls in love, and this form of concentration sometimes moves the admiration of the world. " Faint heart never won fair lady "; equally so, a faint determination never mastered an ugly habit. If the family man with a habit that is making the family miserable would put half as much concentration into curing his habit as he puts into some business problem, in order to make money that he really does not need and is too selfish to give away, he would soon conquer the habit and be, by so much, the better person. Social etiquette has reached such a fine point, under our modern way of doing things, that the members of the same family, living together, are bound to put up with each other's unwholesome habits, an etiquette which is a hindrance to happiness, when, if they had been

trained in a larger-minded way, they might help each other, and foster better feelings by promoting happiness in the home they share.

Old persons with obnoxious habits are prone to say they are too old to learn; what they should say is, they are too selfish to learn, or prefer to have those about them put up with their "little meannesses," rather than themselves make the effort necessary to wipe out their habits. Such persons are not masters of themselves and never have been. No greater small sin is committed than this petty sin, when one member of the family persists in some habit that works to the detriment of all the rest and persists not for a month but for a lifetime perhaps.

To sum up, then, this question of habit cure; first comes the resolution to do the thing required, then the memorization of an affirmative expression, because it is constructive and toning, a good substitute for the expression that is negative and destructive. This practice should be kept up till memory takes on the affirmative expression, and the negative fades away; and along with this goes concentration of mind or purpose; and finally one should seek any influence known that will assist, such as optimistic friends, reading that elevates, change of scene or thought, exercise or prayer, if one has faith.

Those who suddenly and successfully quit one habit for another are of the hysterical temperament usually and become readily "vaccinated" with a suggestion given them; they become intoxicated with an idea at once; perhaps they are fortunate in that they can be hypnotized promptly and remain so; who knows? For the majority of us the problem of life is quite like all other problems we have ever done; we have to chisel each in turn out of the solid rock of inexperience. It matters little how often one fails, if only his purpose to win is kept in sight; each relapse is less and less serious and the falls are further and further apart.

Competition, the basis of that endeavor by which the world forges ahead materially, develops many habits that balance those which spiritual teachings develop in us. *Competition* is the greatest mental *force* in existence. Against competition the feeble efforts of the world at character building may be compared to a child trying to wrestle with a giant.

With six days in the week devoted to competition and a little more than an hour in the one day that is left devoted to spirituality, delivered at arm's length usually, is it any wonder that many fail and fall as a result of the unequal mental training?

The acceptance of spiritual teachings depends, in part at least, upon the stage of evolution and the practices of each individual. Many men have not been through the coffee grinder often enough. This in itself is a factor from the point of view of evolution. The spark is there, it is in every one; it is everywhere; but the expression of it has not been cultivated, perhaps. Spirituality depends upon cultivation or practice quite as much as upon anything else. Practice makes a good machinist, a good musician, perhaps a good Christian; patience and practice will cure any habit whatsoever, but habit-cure and Christianity represent different stages in human life from that held by the truly spiritual-minded. Christianity is a good habit; spirituality is something more. Christianity obtains when a man goes to church as a matter of liking or duty, or perhaps directs a Sunday school. He may be socially inclined, with organizing ability, enjoys recognition and takes a good job, for which there is pay in praise; or it may be he desires to help others gain an ascendency that he himself cannot understand; this is certainly unselfish and so far as it goes is first class. Such an attitude carries a man above his habits usually, — at least, it should. Spiritual teachings will not always take root in soil where only tares in the shape of worry, anger, avarice or bad habits, whether physical or mental, have been growing. Peace of mind affords happiness for some, perhaps, but not happiness for others. The man who is clean up to his chin, who obeys the written laws, or more especially the unwritten social laws, if he has good health, something to do which he loves to do, and a hobby for the sake of recreation, usually has a good time in living, for he gets along comfortably; but these qualities do not constitute spirituality. The spiritual man is not satisfied with peace of mind, he must be in touch with God through faith. The mind rules the body; the spirit also must have help. One who has a spiritual nature can soon raise his powers of resistance to a high level and weld the link of faith in the chain of his life, so that it becomes as easy and comforting for him o talk with God as it is easy and helpful to talk with a dear friend, and more so.

A man must be taken in hand at that point in his education or evolution at which what is said to him will take root. People at the level of mere good citizenship do not all grasp higher teachings; individuals who indulge in mental practices that distract, or physical practices that debilitate, are poor absorbers of spiritual teachings. A man raised above his physical and mental habits is in a position to cultivate whatever tangible spirituality there is in him. One may gain faith because he has a spiritual side to his make-up, and yet be grievously at fault in his habits; this is probably the established order to-day with the majority of men. Too many people pray in one place and put their bad habits on exhibition in another. Those who have mastered their faults, by just this difference in level, are on a plane above that held by many who profess higher things, and their lives are perhaps more potent examples for good.

These worrying, nervous, threadbare people all about us, broken by the stress of modern civilization, are in need of just such relief as treatment and cure of their habits will afford. Their habits once mastered here, they themselves are better fitted for something higher, — for something far beyond and above Nature even, something so transcendent as to be quite beyond words; for something which profoundly influences life and

the spirit of man, for something compared with which all other things are weak and unprofitable. "For I have felt a Presence that disturbs me with the joy of elevated thoughts; a sense sublime of something far more deeply interfused, whose dwelling is the light of setting suns." May we so live that we may grow nearer this glorious Presence which so exalts the beauties of the world for us.

Reports of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

TWENTY-FIRST ANNUAL MEETING.
HELD AT WASHINGTON, D. C., MAY 7 TO 9, 1907.

(Concluded from No. 7, p. 230.)

A CASE OF ADENO-FIBROMA OF THE ANTERIOR WALL OF THE BLADDER.

DR. FRANCIS R. HAGNER, of Washington, D. C., presented this specimen. He said he had never seen a case like it before. L. R., aged sixty-eight, had suffered with prostatic obstruction, with increasing severity, for five years. There was one quart of residual urine. The prostate was small and firm. Several diverticula were seen in the bladder, and also a small stone. On doing a perineal prostatectomy the stone could not be removed, and the bladder was opened from above. On examining the anterior wall of the bladder with the finger a tumor was felt to the right of the median line, under the mucous membrane. The pathological report showed it to be an adeno-fibroma, showing probably a beginning carcinoma. The peculiar feature was the location of the tumor under the mucous membrane.

THE OPERATIVE TREATMENT OF TUMORS OF THE BLADDER

DR. LOUIS E. SCHMIDT, of Chicago, read this paper. An essential difference should be observed in dealing with benign and malignant tumors. The former should be approached from the inside of the bladder, the latter from the outside. In removing benign tumors two methods were used, the endo-vesical, by means of the cystoscope, and by suprapubic cystotomy. The first of these required special skill on the part of the operator, and would not become popular with general surgeons. In the second method, curved scissors should be used in removing the tumor, and ligatures placed as the tumor was removed. The common cause of failure in removing papillomata was because one large tumor was removed, while one or more smaller ones were left. The closed bladder should be suspended to the abdominal wall. In removing malignant tumors the tumor should first be located with the cystoscope, and then approached from the outside of the bladder through a suprapubic incision. The usual method of opening the bladder and hunting for the tumor was condemned. After making the incision, the prevesical fat should be stripped up so that the bladder would be exposed. A few guy-ropes should be fastened to the bladder. The entire bladder should he denuded of its surroundings. A flap of fatty tissue should be turned up over the exposed peritoneum to prevent infection. Any operation that did not remove more than one third of the bladder should be followed by closure of the viscus. A permanent catheter should not be used. The choice of anesthesia in these operations was of considerable importance. He used gas and had found that the patient urinated without the use of a permanent catheter. He had had several cases in which more than two thirds of the bladder was removed, and in which the function was complete after operation. Cystoscopic examination would usually show whether the tumor was benign or malignant. Suspicious ones should be treated as malignant. The operation was justified in malignant cases if it gave only two or three years of comfort. Dr. Schmidt summarized as follows: All benign tumors should be approached from the inside. All malignant tumors should be approached from the outside of the bladder. In all cases in which the loss of substance is not too great the bladder should be completely sutured after the removal of the tumor. The use of the permanent catheter following operations on the bladder should be abolished. All bladders following operation should be kept under constant cystoscopic observation. Gas anesthesia should be used in bladder work.

ELECTION OF OFFICERS.

The following officers were elected: President, Dr. Harvey G. Mudd, of St. Louis; Vice-President, Dr. John van der Poel, of New York; Secretary, Dr. E. L. Keyes, Jr., of New York; Members of Council, Dr. Hugh H. Young, of Baltimore, and Dr. F. Tilden Brown, of New York.

THURSDAY, MAY 9, THIRD DAY.

JOINT SESSION OF THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS AND THE AMERICAN GYNECOLOGICAL SOCIETY.

SOME CONGENITAL VARIATIONS OF THE KIDNEYS AND URETERS, IN REFERENCE TO THEIR DEVELOPMENT AND SURGICAL IMPORTANCE.

DR. GEORGE S. HUNTINGTON, of New York, exhibited an interesting collection of lantern slides illustrating these conditions.

THE RADIOGRAPHIC DIAGNOSIS OF RENAL LESIONS.

DR. LEWIS GREGORY COLE, of New York, read this paper, and showed numerous lantern slides. He divided the rays into direct, indirect and secondary. With the indirect and secondary rays cut off it was possible to show not only the bony detail, but also muscles, fat, connective tissue and even the blood in the veins. With proper technique he believed any variety of renal, ureteral or vesical calculus of sufficient size to justify operation could be diagnosticated. This statement was made after experimenting with the softest calculus that could be found. Enteroliths, osteoplaques, phleboliths and calcified glands often made a diagnosis difficult, particularly in the case of suspected ureteral calculus. Exploratory operation sometimes failed to find stones when they were actually present, or some were found and others left, and for these reasons he thought the x-ray was more reliable. Catheterization of the ureters was better in ureteral stones than in renal stones, but was not certain in either. A combination of catheterization with a styletted catheter and the x-ray was the best method of showing ureteral calculi, the pictures being made at different angles.

SPECIMENS AND ILLUSTRATIONS OF RENAL LITHIASIS, PYONEPHROTIC STONE KIDNEY, AND RENAL TUBERCULOSIS.

DR. CHARLES H. CHETWOOD, of New York, presented this collection of specimens and illustrations.

THE DIAGNOSIS AND TREATMENT OF CALCULI IN THE LOWER END OF THE URETER IN THE MALE.

DR. HUGH H. YOUNG, of Baltimore, said that a few years ago, while taking a trip through the West Indies

he met a very interesting case on shipboard. One year previously the patient had had symptoms of renal colic, but now began to suffer with a peculiar set of symptoms. He had a dull, aching pain in the rectum, pain in the bladder at the end of urination, severe pain on ejaculation, and pain occasionally radiating up to the kidney and sometimes to the testicle. He was told that he had a stone engaged in the lower end of the ureter, which projected into the bladder, irritating it, obstructing urination, impinging upon the seminal vesical, giving the ejaculatory symptoms, and close enough to the rectum to give pain in that organ. He was cystoscoped and the stone was seen sticking out of the orifice of the ureter. The stone was removed and the patient recovered. Since then Dr. Young said he had studied more thoroughly the anatomy of that region, and he thought it was very plain that there was an anatomical explanation for the above group of symptoms. The lower end of the ureter came in contact with the seminal vesicle. The vas deferens hooked around and was very close to it. The rectum lay immediately behind. He had collected 5 or 6 cases showing more or less this group of symptoms in every case. He classified stones in the lower end of the ureter as intravesical, where the stone was projecting into the bladder; intramural, in which the stone was in the bladder wall; and juxtavesical, in which the stone was immediately behind the bladder and close to it. The second case he saw had a stone in the intramural portion of the ureter. This patient had pain in the bladder, severe pain during ejaculation and severe pain in the rectum when constipated. There was no pain in the testicle. In another case in which the stone was intramural there were frequency of urination, pain during urinating radiating to the end of the penis, and renal symptoms, but no rectal or ejaculatory symptoms. In another case in which the stone was a little farther up than that (2 cm. above the bladder) there was no pain on urination, no ejaculatory pain or pain in the rectum, but there was severe pain in the testicle. The stone was in the ureter where the latter crossed the vas deferens. Three other cases presented very much the same symptoms. The intravesical stones could be removed suprapubically, but in some cases the stone was so high up that it was necessary to do the extraperitoneal iliac operation. This extraperitoneal iliac operation had been done by Dr. Young in 8 cases, and he had found 10 others reported in the literature.

CALCULOUS ANURIA, WITH SPECIAL REFERENCE TO BILATERAL RENAL CALCULUS, AND TO THE SIMULTANEOUS PERFORMANCE OF BILATERAL NEPHROTOMY IN THOSE CASES, AND TO CALCULOUS ANURIA OCCURRING IN PATIENTS HAVING BUT ONE KIDNEY.

DR. FRANCIS S. WATSON, of Boston, read this paper. He laid great stress upon the importance, when doing a nephrotomy, of nephrolithotomy in a case of calculous anuria, of cutting into the second kidney, whether the first kidney was found totally or partially destroyed. If the first kidney was totally destroyed, cutting into that kidney alone would only add shock to an already critical condition. So far as he was aware he was the only surgeon who acted upon this principle. It was very difficult to determine when cutting into a kidney just what its functional ability was, but if the surgeon was at all doubtful as to whether it was capable of sustaining life, the other kidney should be cut into then and there. If the contrary was the case the second kidney should not be cut into. Dr. Watson showed an apparatus which he had devised for patients to wear with renal fistula.

THE VALUE AND METHOD OF MENSURATION IN VESICAL URETERAL AND RENAL WORK.

This paper was read by DR. HOWARD KELLY, of Baltimore, who made a plea for more careful, accurate and scientific methods in the study and recording of cases. He described his methods of measuring the female urethra, bladder and ureters, and of measuring lesions in the bladder. He also described his method of transvesical collection of urine, where for any reason the surgeon did not want to catheterize the other ureter. The diseased ureter was plugged with a large ureteral catheter, the bladder wiped out, and the urine from the other side allowed to collect in the bladder.

SPECIMEN: PUS KIDNEY.

DR. WILLIAM E. MOSELY, of Baltimore, presented this specimen. It was a very large pus kidney, which was supposed to be a multilocular cyst of the ovary until the abdomen was opened. The patient presented the typical appearance of a woman with a large ovarian cyst. The kidney contained seven liters of creamy pus, and a stone was found blocking the upper end of the ureter.

A CONSIDERATION OF THE PATHOLOGY, DIAGNOSIS AND TREATMENT OF ACUTE UNILATERAL SEPTIC INFARCTS OF THE KIDNEY.

This paper was read by DR. GEORGE EMERSON BREWER, of New York. One year ago he had presented a paper before the Chicago Medical Society on "Some Observations on Acute Septic Infarcts of the Kidney." Since the publication of that paper a number of successful cases had been reported to the New York Surgical Society, and the criticism made that nephrectomy was not always necessary. In his former paper he was dealing only with the very acute cases, in which nephrectomy was the only measure to save life. The mild types frequently recovered spontaneously. The symptomatology of the milder types was obscure, and the diagnosis was usually not made. A typical case would show the usual symptoms: A female, aged twenty, had double femoral fracture. After three weeks of treatment, she suddenly became violently ill, with symptoms suggesting an attack of acute grippe. The temperature was 104°, pulse accelerated, pains in the extremities and back, tenderness over the right kidney, albumin and some pus in the urine. Exploratory nephrotomy was advised but refused. The symptoms increased in severity. There were now chills, fever, delirium, pain and tenderness in the back. Consent was finally obtained for operation, and the right kidney was explored. The surface of the kidney was found to be covered with deep red spots, and on section the kidney was seen to be full of small abscesses. Some cases closely resembled appendicitis and gall bladder disease. In the severest types nephrectomy should be done. In the milder cases, decapsulation and the opening of cortical abscesses would be sufficient. In the mildest type expectant treatment should be used.

SOME REQUIREMENTS OF "UP-TO-DATE" NEPHRECTOMY.

DR. G. M. EDEBOHLS, of New York, read a paper by this title. In recent years much work had been done in the endeavor to find a reliable method of determining the functional activity of the kidneys, either separately or combined, in advance of a contemplated nephrectomy. Nothing approaching a consensus of opinion had been reached. He considered his method of examining the fellow kidney through a second lumbar

incision the one upon which most reliance could be placed. He advocated decapsulation of the second kidney in these cases to prevent anuria. His conclusion was that no nephrectomy should be done without examining and decapsulating the remaining kidney.

Dr. Caldwell, of New York, showed a number of lantern slides to illustrate the differential diagnosis between calculi in the urinary tract and those bodies outside the urinary tract which might be mistaken for urinary calculi. He agreed with most of Dr. Coles's conclusions, but did not think it was always possible to show a calculus with the x-ray. In the case of certain uric acid calculi, he believed, it was impossible to make a diagnosis. However, no other method was so accurate. He did not sanction the nomenclature used by Dr. Cole in describing the different varieties of rays.

Dr. Howard Kelly, of Baltimore, wanted to know if there was any secret about any part of this x-ray work.

Dr. Cole replied that there was absolutely no secret of success in x-ray work, except the one that Dr. Kelly had, which was attention to the minutest detail from start to finish.

Dr. L. Bolton Bangs, of New York, said he would like to inquire as to the diagnosis and treatment of these phleboliths. When he had found them, without relation to kidney symptoms and therefore without relation to radiographs, he had been puzzled as to their exact location and as to what to do for them. It was possible to remove certain ureteral calculi in the lower end of the ureter by manipulation, with an instrument in the bladder and a finger in the rectum. A case was mentioned in which this was done. He said he wished to inquire of the gynecologists present why kidney infections were more common in women than in men.

Dr. F. Tilden Brown, of New York, spoke of the importance of catheterizing the ureters, and particularly of the importance of employing the styletted catheter combined with radiography. He made a plea for the more general use of these measures. A case was mentioned in which by these measures it had been possible to make out a double ureter, the points of entrance into the kidney, etc. He could not agree with Dr. Cole that a negative diagnosis of stone could be made by the x-ray alone, no matter how carefully and completely the examination was carried out.

Dr. E. B. Cragin, of New York, in answer to the question asked by Dr. Bangs as to the greater frequency of kidney infections in the female than in the male, especially in women who had been pregnant, said it could be explained by the pressure of the uterus on the ureter, particularly the right ureter, due to the position of the uterus in the right oblique diameter of the pelvis, this latter accounting for the greater frequency of infection of the right kidney than the left.

Dr. Francis R. Hagner, of Washington, D. C., reported a case of renal calculus with pyonephrosis, to show the importance of considering the question of renal disease in cases having only bladder symptoms. The patient had never complained of any kidney symptoms, but on operation 30 stones were found in the kidney.

Dr. Howard Kelly, of Baltimore, said an important class of cases in which mensuration was used was cases of hydronephrosis. He collected the fluid and measured it as it came away.

Dr. Latthorn Smith, of Montreal, mentioned a case of a woman who had come to him with what was supposed to be a large ovarian cyst. The abdomen was opened, and it was found to be a large pus kidney containing a number of large calculi. In reply to the question as to why women were more liable to kidney infections than men, he thought there were two reasons, their greater liability to tuberculosis and their greater confinement to the house, predisposing them to the uric acid diathesis and rheumatic troubles generally.

Dr. Cole said if the terms he employed to designate the different varieties of rays had been used before he was not aware of it. He wished to bring the subject before the profession generally as the reason for getting the results shown by Dr. Caldwell and himself. A large amount of indirect rays was the cause of failure.

Dr. Edebohls thought that kidney diseases were more common in women because movable kidney was more frequent in women than in men.

Book Reviews.

Clinical Lectures on Neurasthenia. By Thomas D. Savill, M.D., London. Third (revised and enlarged) edition. 8vo. Pp. xvi, 216. New York: William Wood & Co. 1907.

In the present edition of this work the lectures on diagnosis, pathology and treatment have been enlarged and a new lecture on etiology and prognosis has been added. Some of the errors of the first edition have been corrected, but the author still lacks any thorough knowledge of his particular subject or nervous and mental diseases in general. The need of a third edition, or even of a first edition, is inexplicable.

Surgical Diagnosis. By Daniel N. Eisendrath, A.B., M.D., Adjunct Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Michael Reese and Cook County Hospitals, Chicago. With 482 original illustrations, 15 of them in colors. Philadelphia and London: W. B. Saunders Company. 1907.

Of the writing of many books there is no end. It is four years since the author of this volume produced his useful textbook on Clinical Anatomy. Since then he has been very busy with his writing. To this reviewer his purpose in compiling "Surgical Diagnosis" is not altogether clear. Why did he write this book? He tells us in the first lines of his preface: "A recognition of the necessity of making a correct diagnosis before instituting treatment has prompted me to write this treatise." That bromidic reflection is no stimulus to the unfortunate reviewer in these dog-days. Indeed, the position of a reviewer of books on surgery is a difficult one. Any scribbler is at liberty to review the latest novel of Mr. James, or Mr. Rhodes's History, but the surgical reviewer must be a specially trained person, and, therefore, himself either a rival workman or a friendly fellow-craftsman of him whose book he reviews.

With diligence and temper, however, will this reviewer perform his allotted task, after looking through carefully the octavo of 775 pages before him. The book bears abundant evidence of the toil of the author, and the enterprise of the publishers. The former has taken, in their order, the big and little topics of a treatise on Surgery, and faithfully and laboriously has he dealt with them. Dr. D. L. Schram, who supplies the

chapter on examination of the blood, and Dr. G. Kolischer who writes upon cystoscopy, have abetted the author in the production of this volume.

The book deals with the subject of diagnosis only, — of the diagnosis of those affections which fall properly to the general surgeon. The author seems to have written with fairness and thoroughness, and to have made some study of surgical literature, if one may judge from the numerous familiar paragraphs; but nowhere in the book does this reviewer find proper references to current literature, or to well-known surgical authorities. Steadily for hundreds of pages the writing flows on, serving up to us familiar facts, rarely disguised in a new dress. There are nearly 500 illustrations, mostly photographs,— ordinary, uninteresting. There are a few suggestive skiagraphs, a few colored prints, outline drawings and sketches. The subject of "Surgical Diagnosis" is covered thoroughly; the work is a miracle of the commonplace, and one lays it down at last with his original query unanswered, Why did the author produce it?

The Technic of Operations upon the Intestines and Stomach. By ALFRED H. GOULD, M.D., of Boston. With 190 illustrations, mostly original, several of them in colors. Philadelphia and London: W. B. Saunders Company. 1906.

This is an interesting but curiously uneven book, of which a brief review is not easily accomplished, the good and the second-rate being so constantly commingled. Gould has written an elaborate monograph, addressed directly to the reader, but has adapted throughout a passive, negative and indirect *form* of address, which weakens constantly the force of his argument and exposition. The production is creditable to the publishers and artists, and bears witness to the diligence of the author. There are countless earmarks of the writer's immaturity in a knowledge of constructive technique, and one wishes that he had waited another year before rushing into print with so interesting a mass of material as yet undigested. He should have made a study of correct book-making, but his are common faults and one must overlook them in view of the really beautiful plates and the convenient form of the book.

The author evidently has spent a great deal of time in the laboratory, and his views and statements are based upon experiments upon animals, on anatomical research and an extensive study of surgical literature. He has been fortunate in securing the co-operation of Florence Byrnes, whose beautiful histological drawings illustrate the first chapters of the book, while one recognizes the hand of H. F. Aitken in the careful but somewhat formal and mechanical sketches of gross anatomy, — sketches which, together with those of Miss Byrnes, fill more than half of the 294 pages assigned to the text.

Gould divides his subject into six chapters, and his artists have supplied him with 190 illustrations. Chapter I deals with repair of intestinal wounds and repeats properly enough the well-known views of numerous authors. Incidentally we read in this and subsequent chapters interesting dissertations on Harrington's segmented ring, the best and most satisfactory exposition of that subject hitherto printed. The author deals comprehensively also with repair after the use of the plain suture, the Murphy button and the elastic ligature.

In Chapter II the writer plunges into a discursive essay on suture materials, needles, tying knots, sutures and clamps, — interesting topics, but injected somewhat out of place. Chapter II might better have been reserved for an appendix. It is good, however, and is notable especially for the beautiful cuts with which it is illustrated. In this chapter one reads a description of Gould's useful *reserved mattress stitch*, which is somewhat surprisingly described as "a modification of the Halsted mattress." At the time of writing, this reviewer has re-read Chapter II and compliments the author and artists on the clearness of description and the beauty of the cuts in that chapter.

Chapter III concerns itself mainly with an account of the blood supply of the intestines (Aitken's diagrammatic colored drawing of a section of gut and mesentery, with interlaced arteries and veins, is striking), and the reproduced studies of Monks, on intestinal localization, are as interesting as ever.

Chapters IV and V constitute the pith and marrow of the book. They deal with operations on the intestines and on the stomach and sketch in luminous detail the most approved technique of these operations. As usual, the illustrations are the notable features. Gould has been able to secure a few of Miss Byrnes's admirable anatomical sketches for these chapters, though the bulk of the illustrations come from the hand of Aitken. It seems a pity that one artist could not have supplied and made uniform all of the illustrations. Such a criticism may sound captious, but Gould's book is so ambitious, and in many respects so unique as a collection of illustrations, that one regrets every failure to attain perfection. The pictures show sundry methods of resecting, anastomosing, stitching, grafting omentum and supplying mechanical devices. Perhaps the most interesting subject with which the author deals in Chapter V is McGraw's colostomy with the rubber ligature. Chapter VI is as interesting as Chapter V. The admirable description and illustrations are satisfactory, especially the illustrations of Finney's "pyloroplasty." Nowhere else have we seen so lucidly demonstrated the difficult steps of Finney's somewhat obscure operation.

One cannot assert that Gould's book should be a *vade mecum*, the indispensable companion of every surgeon, but certainly it will be a useful addition to the medical student's library and to the Laboratory of Surgical Research.

This work is dedicated to the eminent teacher and distinguished surgical veteran, Professor Charles Burnham Porter, of the Harvard Medical School.

THE BOSTON

Medical and Surgical Journal.

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SCHOOL FOR SOCIAL WORKERS.

IT becomes increasingly evident that medicine on its practical side is coming nearer and nearer to the various social problems of the time. It follows as a natural consequence that in order to accomplish the best work in relation to social conditions which come within his scope the physician should have a somewhat special training. We have no doubt if the present development goes on, and there is no reason to question that it will not, that an opportunity will be offered a certain number of medically trained men to devote their best energies to the elucidation of social problems quite apart from the ordinary practice of medicine. It has been amply demonstrated, particularly during the last few years, at the Massachusetts General Hospital, that the opportunities for benefiting the poor lie far beyond the mere administration of drugs and other remedial measures. The success of this social work at this institution has been clearly indicative of the necessity for its wider recognition.

We are glad, therefore, in this connection, to call attention to the School for Social Workers in Boston, maintained by Simmons College and Harvard University, which begins its fourth year Oct. 1.

It is of general interest, together with like schools in New York, Chicago and London, as a new departure in the field of education; for these schools were opened, a few years ago, to help answer the call for good workers in charity, correction, neighborhood work and kindred forms of social service. The demand for such is greater than the supply. And the demand is increasing the demand.

The schools do not mean that the body of knowledge, the general principles and technique, on which effective social work is built, is now very extensive or difficult to learn, or that such work is to be wholly done by the so-called professional, but they show a growing appreciation in this field of human endeavor, as in all fields, of the value of experience, and of the economy of real preparation. The more professionals there are, workers of experience, who give their time and thought effectively as leaders, the greater should be the number of others who are doing and giving, some much, some little, but all helpfully, in all sorts of ways of social service.

The Boston School, for example, had twenty-seven students the first year. Last year there were thirty-eight. Nine of these were men. The men were registered in Harvard University, some of them being candidates for degrees, toward which the work in the school counted. The women were registered in Simmons College. One of them completed in the school the requisite courses for the degree of Bachelor of Science. Of the thirty-eight, ten were persons of considerable experience in some form of social service. Thus are brought together men and women, students and workers, to consider from various points of view the problems which are of concern to all who would better social conditions. The course is one academic year. For exceptional reasons, it may be taken in two years. As a preparation for it, women may take a year as special students in Simmons College, studying biology, hygiene, psychology, ethics, economics, etc. But there are no requirements for admission to the school beyond evidence that the student will profit by the opportunities offered. Most of the students give their working time to the course; some give part time.

The instruction is largely by conference, helping students to think for themselves. There is study of, and reports on, selected literature. Lectures are given and special problems are presented by persons of exceptional experience in particular activities. Some very practical work with selected agencies, under skilled direction, is required. The topics of the carefully arranged program, following one another in logical order and being knit together, include the aims of social service; leading principles underlying all social effort; improvement of general conditions of living by community and voluntary action; neighborhood improvement in city and country; treatment of needy families, of persons out of their own families, of the offender and delinquent.

The announcement is now made that the school will conduct this coming year, and probably in the

future, some research work in subjects touching charity and social advance. This work will be done, under skilled direction, by chosen persons, perhaps advanced students with practical experience.

There is evidently opportunity here for a properly qualified medical man to equip himself with a knowledge of modern methods in charity and to bring to the general work the much needed acquaintance with medical matters, and conditions of disease, which so frequently lie at the basis of social problems. The time seems ripe for the medical profession in general, and for certain selected members of it in particular, to extend the range of their activities into a scientific study of social problems to a degree not hitherto attempted. The School for Social Workers which has been established in this city would, no doubt, welcome one or more qualified physicians to its classes in order that the social problems may be approached and discussed primarily from the medical standpoint as well as from the standpoint of other interests and professions.

ACCURACY OF THOUGHT IN MEDICINE.

Each year at the meeting of the larger medical associations several general addresses are delivered. At times the subjects selected deal with some limited phase of medical science. More frequently broader relations of medicine are considered. In the latter there is of necessity often a repetition of subjects, rarely a reiteration of subject matter. Old truths are driven home in new forms, and well known facts go to make up a timely address. Such was the recent address in medicine of W. Hale White before the British Medical Association, a "Plea for Accuracy of Thought in Medicine." It was timely, not because there is less accuracy now than formerly, for such is not the case, but because the examples used by the speaker will impress on almost every medical man that there is yet much inaccuracy in medical thought. Moreover, through the address, beneath a superficial spirit of apparent pessimism, runs a broad undercurrent of optimism, an optimism that should inspire every worker in medicine to inquire, to observe, to experiment, for the field of possible discovery is shown still to be a broad one, and many facts which we accept without a critical thought should still be doubted, then submitted to critical observation and experiment with the confident expectation of the discovery of new facts. In these thoughts there is undoubted optimism and a suggested reaction against a possible unfortunate tendency of medical science to regard its problems as now highly specialized and only capable of solution by the trained worker in the well equipped laboratory. There are many problems of course for the latter, but the average medical man can still do much toward the general advance of medicine should he keep in mind some of the suggestions of Professor White, and for these reasons the address should be widely read.

In discussing diagnosis, Professor White says: "We should not make a diagnosis which implies a cause unless we have grounds from the previous experience of ourselves and others for prophesying what will be found at post-mortem examination. . . . I quite admit that we shall often have to say we do not know, and no doubt our diagnosis will sometimes be wrong, but at any rate our reticence and our mistakes will not retard, but will rather advance progress in medicine. . . . The primary duty of a physician is to find out what is the matter with his patient. Proper treatment can only be secondary to that. . . . Another reason for incorrect treatment is that many say, 'You must do something.' I can never see the reasonableness of this. The very fact that the medical man does not know what to do is actually used as a reason why he should do something. Surely it is the very reason why he should do nothing, for he may well do more harm than good." Certainly there is much common sense in this.

The pitfalls of deductions based on statistics and the necessity of a real knowledge of statistics are forcefully pointed out. In this respect both physician and surgeon are likely to err. The thoughtful reader of some of the examples used in this connection hereafter will and should consider most carefully his data and the contingent circumstances before venturing any conclusion. If this be done, fewer incorrect impressions will be accumulated on which to base principles that will long stand supported by the authority of time and well known author unless some inquiring skeptic prove their falsity.

SEVENTH INTERNATIONAL ZOOLOGICAL CONGRESS.

During this week the seventh International Zoölogical Congress is meeting in this city and, as was expected, has brought together a large number of distinguished zoölogists from various parts of the world. The meetings are for the most part being held in the buildings of the new Harvard Medical School which lend themselves

peculiarly to such a gathering in which various sections are holding meetings at the same time, necessitating the use of many rooms for the reading of papers. Every effort has been made by the local committee to render the stay of the visiting men of science and their families enjoyable. To this end many excursions and entertainments have been planned, and there will be opportunity, therefore, not only to attend the various scientific sessions, but also to visit many points of historical or of educational interest in the vicinity of Boston. The general meetings of the congress, which have been very largely attended, are being held in Jordan Hall at the New England Conservatory of Music.

At the first general meeting of the congress, after introductory remarks by Prof. Alexander Agassiz, an address was delivered by Prof. R. Hertwig, of the University of Munich, on "Newer Problems in the Study of the Cell." This was, perhaps, the most notable contribution of the meeting, but many others, both from American and foreign investigators, will prove of much value as indicating the progress of science in the zoölogical field. An address by Professor Brooks on the subject, "Are Heredity and Variation Facts?" and the discussion of Entomology in its practical aspects by Dr. L. O. Howard will undoubtedly excite a high degree of interest. The section meetings are filled with papers chiefly of scientific interest, and it is not to be questioned that during the week will be presented the latest investigations in a wide range of correlated subjects.

These meetings, which are begun in Boston, are to be continued in Philadelphia, Washington and New York, so that the visiting zoölogists will have gained an adequate idea of the scientific foundations in the various Eastern cities, and, incidentally, will have learned something of American life. It is a matter of interest that such a congress should be held under the auspices of a medical school as is being done in Boston. It indicates the gradual integration of the natural sciences in conjunction with the development of specialism, and is altogether a hopeful sign for the future.

MEDICAL NOTES.

SCARLET FEVER IN CHICAGO. — According to the *Bulletin* of the Chicago State Board of Health, special attention has been paid to scarlet fever during the last twelve months, because fifty years' record of this disease in the city indicates that one of its characteristic epidemic waves has set in, which may not entirely subside for four or five years to come. These epidemic waves are due to accumulations of susceptible individuals during the periods of decreasing frequency of this disease, as is well shown in the diagram. Previous to 1876 the epidemics averaged six years apart, and the death-rate in 1859 reached the high point of 27.2 per 10,000 population. The epidemics gradually declined in virulence till that of 1876–7, with a rate of 19.05. The outbreak in 1879 gave a rate of only 7.92 and succeeding epidemics have shown a steady decline till 1906. The years 1896 and 1905 had a minimum of scarlet fever, with a rate of only 0.39 per 10,000 of population. Owing to the comparative freedom from the disease for several years, a large crop of susceptibles has accumulated, with the resulting epidemic of the past year. In 1906 the rate rose to 2.41 and January to June, 1907, showed a further increase to 4.45, a rate which has not been exceeded since 1884. Last month the rate returned to 2.38.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Aug. 21, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 27, scarlatina 29, typhoid fever 13, measles 10, tuberculosis 35, smallpox 0.

The death-rate of the reported deaths for the week ending August 21, 1907, was 20.82.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 17, 1907, was 220, against 228 the corresponding week of last year, showing a decrease of 8 deaths and making the death-rate for the week 18.83. Of this number 120 were males and 100 were females; 213 were white and 7 colored; 146 were born in the United States, 71 in foreign countries and 3 unknown; 36 were of American parentage, 163 of foreign parentage and 21 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 31 cases and 1 death; scarlatina, 24 cases and 0 deaths; typhoid fever, 11 cases and 1 death; measles, 19 cases and 2 deaths; tuberculosis, 43 cases and 25 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 6, whooping cough 1, heart disease 17, bronchitis 3 and marasmus 1. There were 18 deaths from violent causes. The number of children who died under one year was 70; the number under five years, 86. The number of persons who died

over sixty years of age was 33. The deaths in public institutions were 75.

There were 2 cases and 3 deaths reported from cerebrospinal meningitis during the week.

Enlargement of Mary Fletcher Hospital, Burlington, Vt. — Additions to the Mary Fletcher Hospital at Burlington are being made at a cost of $100,000. Two new wings are to be built, stretching east and west from the main administration building, each 110 by 50 feet. It is proposed to devote one of these wards to surgery and the other to medical cases.

Gift to Worcester, Mass., Memorial Hospital. — Through the generosity of Mr. Charles H. Morgan and Mr. George L. Newton the Worcester Memorial Hospital has received funds to the amount of $80,000 for the erecting of new wards. Mr. Morgan's gift, of not over $40,000, is to be used for the construction of a maternity ward to be known as the Rebecca Morgan Memorial Ward. The remaining $40,000, given by Mr. Newton, is to be used for a building for private patients.

NEW YORK.

A Serum for Meningitis. — The newspapers report the apparent success of a new serum against cerebrospinal meningitis, devised by Dr. Simon Flexner, of New York, director of the Rockefeller Institute for Medical Research, in an outbreak of the disease at Castalia, Ohio. The serum was employed on the advice of Dr. George T. Ladd, of Cleveland, who is a member of the faculty of the Western Reserve Medical College and on the staff of the Lakeside Hospital. Whether it was given in other cases is not stated, but in three cases, in which the ages of the patients were respectively 23, 16 and 3 years, and which in the opinion of the local profession would inevitably have proved fatal without it, recovery followed the use of the serum. Dr. Flexner has been in Europe this summer, but is expected back very shortly.

Analysis of Food Products. — In the monthly bulletin of the State Health Department, given out on August 6, it is announced that the most recent analyses of food products, made for the purpose of determining whether preservatives are employed, show a considerable improvement in this respect. Out of nine samples of canned meats examined, but one contained a preservative. Of twenty-five samples of bottled beer examined, several contained sulphites, three or four, fluoric acid, and two, salicylic acid.

Fatal Poisoning by Cocaine. — A case of fatal poisoning by cocaine employed as a local anesthetic occurred in the practice of Dr. G. Lenox Curtis, a well-known specialist, on Aug. 15. The operation for which the cocaine was employed was the removal of tonsils and adenoids, and the patient was the seven-year-old son of Thomas T. Whiting, of Burlington, Vt., an intimate friend of Dr. Curtis. The operation was successfully performed and the boy appeared to be in excellent condition for half an hour afterward, when sudden collapse occurred, and the utmost efforts of Dr. Curtis and a colleague were unable to avert the fatal issue.

Arrest of President of Woodbury Dermatological Institute. — In order to test the new medical law enacted by the recent Legislature, Robert Buggeln, president of the Woodbury Dermatological Institute, has been arrested at the instance of the Public Health Defense League, and charged with violating a section of the law which provides that any person not a registered physician who shall advertise to practise medicine shall be guilty of a misdemeanor. Buggeln was arraigned in the Jefferson Market Police Court, and after the usual formalities was paroled in the custody of his lawyer. The proceeding begun by this arrest is of wide scope, and if the Health Defense League is successful in its contention, the decision of the courts will affect not only the practice of medicine by corporations of quack doctors and of patent medicine companies in the state, but also that of trust and fidelity companies with medical features, which undertake the business of attorneys. John S. Cooper, counsel of the League, is of the opinion that it does not matter whether a corporation employs physicians or not, and that persons who accept treatment under them are not protected by that provision of the law which makes all communications between physician and patient confidential. In Pennsylvania it has been determined that a corporation entirely composed of physicians may practise medicine, but he believes that this contention is not in accord with the spirit of the New York law. In support of this view Mr. Cooper quotes the opinion of the Appellate Division of the New York Supreme Court by which a lawyer, Abraham Kaffinburg, was disbarred. By this decision it was declared that when an attorney took his oath of office he became part of the machinery of justice in the state, and that his permission to practise was a personal license which he could not delegate to others. This

doctrine, he maintains, must be applied with equal force to physicians. Under the Pennsylvania decision, should a corporation of physicians be formed, it is evident that any member of such corporation could transfer, with his stock, all of the privileges and duties enjoyed and performed by him to a layman. But, taking the opinion of the Appellate Division in the Kaffinburg case, which was affirmed by the Court of Appeals, in connection with the section of the law under which Buggeln was arrested, it would seem evident that no corporation, however formed, could practise medicine in the State of New York, or exercise the fiduciary relation which lawyers and physicians exercise, any more than a corporation could exercise the relation of a clergyman or priest. Another part of the section under which Buggeln's arrest was made provides that no one can conduct a medical practice under the name of another, and it has been established as a matter of fact, that John H. Woodbury, who organized and for a considerable time managed the Woodbury Institute, is no longer connected with that concern. The evidence which caused the arrest was obtained from the newspaper advertisements and the literature disseminated by Buggeln.

Current Literature.

MEDICAL RECORD.
JULY 27, 1907.

1. *COLEY, W. B. *Inoperable Sarcoma. A Further Report of Cases Successfully Treated with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus.*
2. DICKINSON, G. K. *Through Physiology to Pathology in Complications of Gall-Bladder Disease.*
3. *BREW, J. *Reinfection with Syphilis; Report of a Case with Hereditary Syphilis in the Child.*
4. GALLANT, A. E. *The Long-Waisted Woman and Her Movable Kidney.*
5. ROSENWASSER, A. A. *Apomorphine in Acute Alcoholism; a Plea for Its More Extensive Employment.*

1. Coley makes a report of forty-two cases treated by himself for inoperable sarcoma with mixed toxins of erysipelas and *Bacillus prodigiosus*, with twenty-six patients remaining well after a lapse of from three to fourteen years since the treatment. The author at first used the germs of erysipelas alone, but later found that the combination of the two germs had a better effect, as well as less danger, than the single germ. Later he used only sterilized cultures containing both the toxins and the bodies of the bacteria, since this mixture produced a much more decided effect than weaker ones. The curative action is brought about by increased leucocytosis and coagulation necrosis. The treatment should begin with not more than one-quarter minim diluted with boiled water. If the tumor is highly vascular, begin outside the tumor. When given in the tumor increase the dose by one-quarter minim, and by one-half minim if remote from tumor, until desired reaction is obtained. The tumor soon becomes smaller, more movable and less vascular. Its action is both local and systemic, and the systemic effect alone may be used successfully in cases that are inaccessible. The author finds about one hundred successes by other physicians by this method. It may be used as a prophylactic against recurrence after operation. A new field is in the injection of cases in which the amputation of a long bone appears necessary, and by its use the amputation may be avoided. The author gives a detailed description of twelve of his successful cases.

3. Brew describes a case in which there was every reason to believe that syphilis had existed and been cured and a reinfection had occurred. Most syphilographers at the present day agree in saying that such a cure and reinfection are possible, although rare. The patient described was treated carefully for an undoubted attack of syphilis, from which he recovered and remained without any syphilitic manifestations for fifteen years. He was then treated for a hard chancre followed by a macular eruption and sore throat. Marrying then, a syphilitic child was born to the couple, although the mother showed no evidences of ever having had the disease. The manifestations of the second attack could not have been tertiary in their nature.

NEW YORK MEDICAL JOURNAL.
JULY 27, 1907.

1. *CRILE, G. W., and COLE, H. P. *Transfusion in Dogs Upon Whom Bilateral Nephrectomy Has Been Performed.*
2. HUDSON MAKUEN, G. *Operations for Cleft Palate and Their Results; especially in Respect to the Improvement of Speech.*
3. GRAEF, C. *Some Points on Ear, Nose and Throat Conditions in Children of Interest to General Practitioners.*
4. BABCOCK, W. W. *A New Operation for the Extirpation of Varicose Veins of the Leg.*
5. BERG, W. N. *The Relation between the Physiological Action of Ions and Their Physico-Chemical Properties.*
6. *ALLEN, A. H. *Phagocytosis, etc., in Sputum, as a Measure of Resistance in Tuberculosis.*
7. BRANDEIS, J. W. *Consanguinity: a Factor in Immunity to Scarlet Fever.*

1. Crile and Cole performed bilateral nephrectomy upon 10 dogs, 5 of which were kept as controls and 5 of which were bled and transfused forty-eight hours or more afterward. The transfused dogs lived on the average longer than those not transfused, but not longer than dogs subjected to bilateral nephrectomy by other writers.

6. Allen has made studies of phagocytosis of tubercle bacilli in sputum with a view to determining whether or not the intracellular position of tubercle bacilli gave any evidence of the resistance of the patient. His results were in the main negative, except for the somewhat unexpected finding that cases treated with tuberculin showed less phagocytosis than those which had not received tuberculin. It is made clear that studies of phagocytosis in sputum are subject to error from many sources.
[F. W. P.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
JULY 27, 1907.

1. BIERING, W. L. *The Need of Medical Co-operation in Laboratory Work.*
2. TENNEY, J. A. *The Relation of the Circumlental Space to the Causation of Glaucoma as Shown by the Würdemann Lamp.*
3. *RISLEY, S. D. *The Surgical Treatment of Chronic Glaucoma.*
4. OLIVER, C. A. *The Preventive Treatment of Transferred Ophthalmitis (so-called Sympathetic Ophthalmitis).*
5. GRADLE, H. *Future Observations on Retinitis Punctata.*
6. *KOLISCHER, G., and SCHMIDT, L. E. *Surgery of Tumors of the Bladder from a Modern Aspect.*
7. RAVOGLI, A. *Onychomycosis Trichophytina.*
8. DILLER, T. *Two Cases of Tumor of the Ponto-Cerebellar Angle with Autopsies.*
9. TIMME, W. *Carcinosis of the Brain and Spinal Cord.*
10. VARNEY, H. R. *Opsonic Therapy in Skin Diseases.*
11. *BULKLEY, L. D. *Significance and Treatment of Itching.*
12. THEOBALD, S. *Indications for the Employment of Adrenalin Chlorid in Conjunction with Cocain in Operations on the Eye.*

3. Risley urges surgical treatment not only in the inflammatory types of glaucoma but in the so-called chronic or non-inflammatory types, when the gradual onset and lack of severe symptoms make early diagnosis difficult. In such cases the beginning is marked only by slight transient exacerbation of dimness of vision, with some discomfort, pain or sense of fullness in the eye or peri-orbital region. Recurrences occur with increasing frequency, and the impairment of vision becomes permanent. The eyes become injected, the cornea steamy, the tension of the eyeball somewhat increased, perhaps with cupping of the optic nerve. In such cases an early iridectomy may do much to check the progress of the disease. The technic of iridectomy is important to the success of the result. The difficulties encountered in the late stages of the disease are largely to blame for the failures reported in such cases. The steps of the operation are described in detail.

6. In a fully illustrated article Kolischer and Schmidt lay down the rules for the operative treatment of tumors of the bladder, the essential points of which are substantially as follows: First, benign tumors should be approached from the inside, malignant tumors from the outside of the bladder. In the endovesical operation on benign tumors the authors prefer the cystoscope of direct view, though when the growth is located at the vertex of the bladder, which is extremely rare, the so-called long wire loop of Nitze's operative cystoscope should be employed. In the operation by incision, the suprapubic is the route to be followed and the fundamental principle of the operation is that it should be conducted with one object always in view, *i. e.*, the complete closure of the viscus after the tumor is removed. A liberal incision through the anterior wall is absolutely necessary. The technic of both methods is given in detail. In case of malignant growths, the authors emphasize the importance of a topographic diagnosis of the tumor before operation and a free exposure of that part of the bladder, which is to be in the field of resection, so far as possible, and attempt should be made to reform the bladder after operation for malignant tumors, and it is remarkable how small a remnant will sometimes suffice to form a serviceable organ. When this is not possible, the best method, they say, is to establish permanent kidney fistulas. Kolischer and Schmidt believe that it is practically always possible to determine the character of a bladder tumor before operation; any one of experience in cystoscopic diagnosis can recognize a benign growth, and doubtful ones are to be considered and treated as malign. Nitrous oxide anesthesia should be the one chosen in all cutting operations. Besides its safety as regards the heart, it has the advantage that the patient returns to full consciousness immediately after the operation, thus affording better chances for natural micturition, early breathing exercises and administration of food and drink. A constant cystoscopic surveillance should be maintained over any bladder that has ever been operated on for tumor. The permanent catheter, they say, should be absolutely done away with.

11. Bulkley begins his article with a good general summary and classification of the causes of itching. These he divides under three headings: external causes, notably mechanical irritations, toxic agents, climatic influences, vegetable and animal parasites; idiopathic causes, neurotic and senile; and constitutional causes, notably autointoxication and constitutional skin diseases, such as eczema. These causes must be detected and removed if possible before treatment can be successful. Unsuitable underclothes must be changed, ivy poisoning prevented, extremes of heat and cold guarded against and scabies or pediculosis overcome. Particularly in neurotic and autotoxic cases constitutional treatment is important. Diabetes must be treated if present, and digestive abnormalities must be arrested. Tonics, such as iron, arsenic and strychnine, are of value. As for analgesics it is well to remember that opium and morphine are apt to aggravate the trouble; trional may do the same. Veronal on the other hand is of great service, also chloral, bromide and cannabis indica. In rare cases a few whiffs of chloroform may be used to produce insensibility until other measures can have their effect. Locally the avoidance of irritants and the prevention of scratching are of prime importance. For children a pillow case is an excellent means of restraint, the head being put through a hole made in the closed end and safety pins between the arms and the body and betwee nthe legs effectually controlling movements of the limbs. Of external applications carbolic acid stands pre-eminent. This is best used in the following formula: ℞. Acid, carbolic, ʒss–ʒj, pulv. calamin prep. ʒi, zinci oxidi ʒii, glycerin. ʒiii, aqua calcis ʒi, aquæ rosæ ad ʒiv. Ichthyol in from 10% to 20% solution in water or in oil is of value. Of ointments carbolic acid, the most efficient, is as follows: ℞. Acid carbolic gr. xx–xl; lanolin ʒi; boroglycerin ʒiv; ung. aquæ rosæ ʒiii; or on unbroken skin: ℞. Chloral hydrate and gum camphor each ʒss–i, compound lanolin ointment ʒi. Glycerite of starch may be substituted for the fatty base of ointments. Tar and oil of cade are also useful. [F. W. P.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

JULY, 1907.

1. *HALSTED, W. S. *Hypoparathyreosis, Status Parathyreoprivus and Transplantation of the Parathyroid Glands.*
2. *MACKENZIE, J. *The Interpretation of the Pulsations of the Jugular Veins.*
3. *VON EBERTS, E. M., and HILL, W. H. P. *Bacterial Inoculation in the Treatment of Localized Infections.*
4. *DA COSTA, J. C. *The Opsonic Index in Diabetes Mellitus.*
5. *FORCHHEIMER, F. *Chronic Intestinal Auto-Inoculation.*
6. *BUTLER, W. J. *The Auscultatory and Percussion Findings in the Heart in Late Childhood.*
7. ROBERTS, J. B. *Improved Methods in the Successful Operative Treatment of Cleft Palate.*
8. BULLARD, W. N. *Obstetric Paralysis.*
9. BURR, C. W. *Tactile Amnesia.*
10. POTTS, B. H. *Difficulties in the Diagnosis of Brain Abscess.*

1. Halsted's article treats of the results of removal of or injury to the parathyroid glands, and the treatment of the disorder by feeding with the parathyroids of animals. A considerable number of cases of tetany have been reported following operations for goiter. One such case, described at length, fills a large part of this paper. It is known that during the operation the right inferior parathyroid was injured; following the operation the patient at once began to seem restless, and on the seventh day began to have periodic spasmodic attacks. Parathyroid feeding seemed to give marked relief, the fresh glands appearing to be more efficient than dried preparations. Experiments are reported in which parathyroids of an animal have been transplanted into the animal's spleen. In human patients Halsted has several times transplanted parathyroids into the opposite lobe of the thyroid when their nutrition has been imperiled during operation for goiter. In conclusion the danger of tetany as a result of operations upon the thyroid is reiterated, and certain directions are given for the avoidance of injury to the parathyroids.

2. MacKenzie proposes the terms "auricular venous pulse" and "ventricular venous pulse," to replace those of normal or negative venous pulse and pathological or positive venous pulse hitherto employed. A visible venous pulse may be present in apparently good health, or absent in severe cardiac failure. It sometimes appears temporarily in conditions of debility; it is possible that back flow from the auricle depends upon relaxation of the muscle band described by Keith as normally by its contraction shutting off the auricle from the superior vena cava. It is probable that the fibers controlling the tricuspid valve may also relax, permitting tricuspid regurgitation. MacKenzie gives evidence to show that tricuspid regurgitation is of more frequent occurrence than American physicians recognize. He analyses tracings of jugular pulsations which show three waves in each cycle: the auricular wave in the auricular systole, exaggerated in cases with marked auricular venous pulse; the carotid wave which he believes to be merely the transmitted pulsation of the carotid artery; and the ventricular wave, normally small, but very prominent in cases with the ventricular, the so-called pathological or positive venous pulse. MacKenzie believes that venous pulse of the auricular as well as of the ventricular type is caused by tricuspid regurgitation, and shows tracings of cases where, according

to the degree of compensation, the jugular pulse alternated between the two types with curves indicating the gradual transition between the two during the periods of change. He believes that the auricular pulse is seen when a slight tricuspid regurgitation has led only to slight overfilling of the auricle before the auricular systole, whereas the ventricular venous pulse is due to direct regurgitation of blood from the tricuspid valve to the jugular vein.

3. Von Eberts and Hill describe their technic in preparation and administration of bacterial vaccines, and report selected cases of brilliant results. In their work they have followed closely the methods of A. E. Wright, controlling the dosage by the opsonic index. Cases where the treatment was followed by recovery comprise the following conditions: tuberculous ulceration of the bladder; lupus; tuberculous arthritis; tuberculous cervical adenitis; furunculosis; carbuncle; suppurative periostitis; multiple abscess; acne indurata; gonorrheal polyarthritis; and epidemic meningitis.

4. Da Costa, in view of the susceptibility of many diabetics toward bacterial infections, notably toward cutaneous infections and pulmonary tuberculosis, has tested the opsonic index of 22 cases, using the staphylococcus as a representative organism. He finds the index quite constantly low, and especially so in three of the cases in which acetone and diacetic acid were present in the urine. The amount of sugar in the urine bore no constant relation to the diminution of the opsonic index. The article is concluded by a minute description of the technic of determining the opsonic index.

5. Forchheimer defines intestinal auto-intoxication as that condition in which toxins formed in the intestine are absorbed by the organism in which they are produced. These toxins are formed principally if not entirely from albumin and nuclein,. Some albumoses, phenol, indol and the purin bodies, especially the xanthins, are the substances of principal interest. Substances produced by the action of enzymes, albumoses and perhaps the xanthines are formed almost entirely in the small intestine. The bacterial putrefactive products are formed almost entirely in the large intestine. On absorption these substances are in part changed and rendered non-toxic in the liver, lymph glands and other structures, and in part they are excreted by the kidneys. The amount of toxic bodies formed depends upon the nature of the food, the time that it remains in the colon and the character of the processes within the intestine, some pathological modifications of which may be of more importance than is now understood. Clinically 77 cases believed to have intestinal auto-intoxication are analyzed. It is not stated upon what basis the diagnosis was made. The symptoms were extremely various. Riggs's disease of the gums, stomach and intestinal disorders were quite constantly present, especially the last of these. Indicanuria was found in 68 of the 77. Nervous symptoms, especially headaches, were frequent. Circulatory neuroses and myocardial changes were present in a majority of the cases. In closing, the reader is cautioned against making the diagnosis of intestinal auto-intoxication too easily, and expecting it to explain too much in the way of symptoms.

6. Butler's article is the result of his examinations of the heart in 100 healthy children. The outlines and position are carefully recorded as well as a description of the character of the sounds. Murmurs were present in 64 out of the 100, 46 of these murmurs being heard only in recumbency. They were as a rule variable and inconstant, not heard far beyond the cardiac borders, influenced by position and by respiration. Butler considers them to be accidental murmurs, perhaps cardio-pulmonary. He emphasizes the importance of recognizing them as not organic. [F. W. P.]

THE LANCET.

JUNE 29, 1907.

1. SIMPSON, W. J. R. *The Croonian Lectures on Plague. Lecture I.*
2. KEETLEY, C. R. B. *The Conservative Surgery of the Abdomen, especially of the Appendix Vermiformis, and its Relation to the Surgical Treatment of Chronic Constipation.*
3. GOLDSMITH, B. K. *The Influence of School Life on the Spread of Scarlet Fever.*
4. OLIVER, T. *Rescue Work in Mines: Lessons from the Courrières Mine Catastrophe in France.*
5. CLARKE, J. M. *Two Cases of Cerebral Abscess.*
6. *FORBES-ROSS, F. W. *Grocco's Triangle: Physical and Anatomical Explanation.*
7. *WILLIAMSON, R. T. *The Loss of the Tendo Achillis Reflex and its Diagnostic Value in "Alcoholic" Failure of the Heart.*
8. LUCY, R. H. *A Case of Splenic Abscess.*
9. *FLETCHER, W. *Rice and Beri-beri. Preliminary Report on an Experiment Conducted at the Kuala Lumpur Lunatic Asylum.*
10. SANDWITH, F. M. *The Introductory Gresham Lecture.*

6. Forbes-Ross goes into details of the physical causes and characteristics of that area of dullness in pleurisy with effusion found on the sound side of the chest near the spine. The height of this triangle is the height of the fluid on the affected side; it is a triangle in shape because the costo-vertebral groove is widest and deepest below, and narrows and becomes shallow as it ascends, so that the lung on the sound side is able to get nearer to the vertebral column and add its resonance to the dullness transmitted from the diseased side, whereas below it is separated by the thick layer of muscle in the costo-vertebral groove. The writer explains certain exceptions to this rule, especially as applied to empyemata.

7. Alcoholic heart failure is a form of cardiac syncope often met with in certain parts of England where especially large amounts of beer or spirits are taken. The diagnosis is based on the alcoholic history, the absence of valvular disease, of nephritis, and absence of other known causes of cardiac failure. Williamson believes that a valuable diagnostic sign is the loss of the Achilles reflex in these cases while in heart failure due to other causes it is always present.

9. Fletcher conducted an experiment on the lunatics in an insane asylum in Malay during a recent epidemic of beri-beri. A certain number were fed on ordinary uncured rice and others were fed on cured rice. Out of 120 fed on uncured rice 34 suffered from beri-beri and 18 died; of the 34 sufferers 10 had their diet changed to cured rice, and all recovered. Out of 123 fed on cured rice there were only 2 cases of the disease, both of whom had it on entering the asylum. He believes that it is caused directly or indirectly by the use of uncured rice. The causes might be (1) a poison in the rice, (2) deficiency of proteid matter in the rice with nitrogen starvation, or (3) that the rice is not sufficiently nutritious and leaves the body open to infection. [J. B. H.]

BRITISH MEDICAL JOURNAL.

JUNE 29, 1907.

1. *EVE, F. *The Pathology and Treatment of Tumours of the Jaws.*
2. *STARR, F. N. G. *A New Method of Dealing with Cleft Palate.*
3. DOWNES, H. *Severe Hemoptysis Treated by Means of the Ice-bag.*
4. CLARKE, A. T. F. *Goitre Operations under Local Anesthesia.*
5. TOMKINSON, J. G. *The Eclectic Treatment of Lupus Vulgaris.*

1. Tumors of the jaws are interesting on account of the great multiplicity of the structures which may be involved. The writer first considers epulis, basing his statements on 38 cases admitted to the London Hospital. In excising one of these tumors the teeth in the immediate neighborhood should be removed with the portion of the alveolar arch involved. He then takes up tumors of the jaw itself. Many of these originate he believes from the remains of embryonic tissues, "rests," and he classifies them into two large groups, (1) originating from these "rests," and (2) mostly carcinomatous, originating as a result of chronic iritation of some kind. He considers in detail the pathology of each group as to operation; the mortality is still large, 20% to 30%. A pulmonary ligature of the carotid and laryngotomy he thinks distinctly advisable. The tendency to implicate glands in tumors of this region

has been underestimated. He uses a Gigli saw in cutting through bony parts.

2. Starr in his cleft palate operations uses a thin aluminum plate along the roof of the mouth as a splint to prevent tension. He tried C. H. Mayo's suggestion to use tape for this purpose but found that although it decreased tension it increased the chance of infection and became very foul. The metal, however, has proved very satisfactory. [J. B. H.]

THE EDINBURGH MEDICAL JOURNAL.

JUNE, 1907.

1. *KER, C., and CROOM, D. H. *The Therapeutic Value of Formic Acid in the Treatment of Diphtheria.*
2. BATTLE, W. H. *Traumatic Rupture of the Intestine.*
3. DON, A. *The Diagnostic Value of Radiography in Tuberculosis of Bone.*
4. SYME, W. S. *Delayed Speech in Children.*
5. BARCROFT, D. M. *On Bier's Treatment of Acute Inflammatory Conditions by Hyperemia.*
6. *BULLMORE, H. H., and WATERHOUSE, H. *The Blood in Rheumatoid Arthritis.*
7. FISHER, T. *A Case of Continuous Murmur over the Pulmonary Area of the Heart.*
8. OLIVER, J. *Two Interesting Neoplasms of the Uterus.*

1. Ker and Croom believe that distinctly beneficial results are to be obtained in diphtheria from the use of formic acid, in doses of 5 to 20 minims of a 25% watery solution every four hours. Dosage is graduated more by the severity of the case than by the age of the patient. Convalescence was shorter, and there was a marked diminution in the number of paralyses.

6. Bullmore and Waterhouse have studied the blood in 24 cases of rheumatoid arthritis and conclude that anemia is always present. The leucocytes are normal in number with the normal differential count. In a few cases myelocytes were found. [J. B. H.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 20.

MAY 20, 1907.

1. *MARMOREK, A. *Further Investigations on the Tubercle Bacillus and Anti-Tuberculosis Serum.*
2. RIEDEL. *The Physical Treatment of Headache.*
3. MEYER, L. *A Case of Blepharoschisis.*
4. *PIORKOWSKI. *Iodofan.*
5. FRANZE, P. C., and PÖHLMANN, L. *Sarason's Oxygen Baths (Ozet-bader).*
6. MINOR, L. *The Frequency of Quinquaud's Phenomenon in Alcoholics and in Various Nervous Diseases.* (Continued.)

1. By various modifications of the mode of infection and of the bacilli used, Marmorek has been able to change at will the course of tuberculosis in guinea pigs. Bacilli of weak virulence can be obtained by using for injection the heart's blood of animals suffering from severe tuberculosis. The subcutaneous injection of such blood causes a local tuberculous abscess, while the intra-arterial, intravenous and intraperitoneal route does not result in infection. If, however, these weakened tubercle bacilli were "activated" after introduction by means of repeated tuberculin injections, infection did take place, and contrary to the usual course the lungs were involved early. Marmorek was even able by this method to produce cavities in the upper lobes following intraperitoneal and intravenous inoculation. The early localization in the lungs therefore depends, according to him, on the reciprocal relations between virulence of the organism and resistance of the body tissues. The question of hereditary predisposition to tuberculosis was approached in the following way: the young of tuberculous guinea pigs were subjected to inoculation with the before mentioned blood containing bacilli of low virulence, and killed at the end of several months. These animals in fact showed lesions of tuberculosis, which were absent in the controls. But it was necessary that the mother should be in an advanced stage of tuberculosis at the time the litter was born. The last part of the article deals with Marmorek's anti-tuberculosis serum. Animal experiments show that it will prevent infection if injected soon after inoculation with a dose of tubercle bacilli sufficient under other circumtances to produce the disease. The clinical value of the serum for man he claims is established for surgical forms of tuberculosis; the rectal method of administration is preferable because symptoms of the "serum disease" are avoided thereby, *i. e.*, fever, rashes, inflammation about the point of injection. For pulmonary tuberculosis he has provided a serum made by immunizing horses against, first, the tubercle bacillus, and later, the streptococcus. The exact status of this serum must be left to the future to decide.

4. Iodofan is a substitute for iodoform with the formula $C_6 H_3 I (OH)_2 . H CO H$. When brought in contact with wound secretions it splits off formaldehyde iodide. Piorkowski's experiments show that it is feebly bactericidal, but exerts a marked inhibition on the *growth* of bacteria. It also has a very prompt deodorizing action, which is much greater than that of either iodoform or formaldehyde. [W. T.]

No. 21. MAY 27, 1907.

1. *ENGEL, K. *Clinical Investigations on the Refraction-Coefficient of the Blood Serum.*
2. *RAUTENBERG, E. *The Pulsation of the Left Auricle and its Significance.*
3. *ASCOLI, M., and IZAR, G. *The Physiological Action of the Colloidal Metals on Man.*
4. *COENEN, H. *The Development of the Theory of the Basal-Cell Carcinoma.*
5. MINOR, L. *The Frequency of Quinquaud's Phenomenon in Drinkers and Non-Drinkers and in Nervous Diseases.* (Concluded.)

1. The refraction-coefficient of the blood serum, as Reiss has shown, corresponds very closely to its albumin content. The procedure is adapted for clinical purposes, requiring only a few drops of blood and little time for the determination. It does *not* vary as the number of red corpuscles. Engel reports the results of measurements with the refractometer in a variety of diseases. The lowest values, far below the normal, were found in parenchymatous nephritis, and are ascribed to hydremia. The coefficient is lowest with edema, but may be quite low in cases without edema. In heart disease with hydrops the values were only slightly reduced, so that the determination may be of diagnostic value under certain circumstances. In diabetes the coefficient was very high in several instances, but this cannot be ascribed with certainty to a high albumin content, for we do not know the effect on refraction of the sugar, acetone, etc., that are present in the serum. In acute infectious diseases the coefficient was reduced during the febrile period; in tuberculosis of the lungs it was normal except in rapidly advancing cases. Fifteen cases of cancer showed a marked hydremia, as judged by the low refraction values. In general low values point to the existence of hydremia, while high ones are more difficult of interpretation.

2. Rautenberg publishes curves showing the normal pulsation of the left auricle, registered by means of apparatus in the esophagus. He finds an elevation corresponding to the auricular systole, followed by another synchronous with the ventricular systole; diastole of the auricle is marked by a sharp fall in the curve. He interprets his tracings quite differently from Minkowski.

3. The interesting work of Ascoli and Izar shows that in healthy persons the intravenous or subcutaneous injection of stable solutions of colloidal silver or platinum produces a marked increase in the N excretion. This increase was found to involve chiefly the uric acid excretion, to a lesser degree that of urea and amido-acids; it began within a few hours and lasted several days. The phosphate excretion was not affected. Administration by mouth or rectum produced no increase of the total N, but a relative increase of uric acid. Sterilizing the colloidal solutions by heat rendered them ineffective as far as the metabolism was concerned.

4. Basal cell carcinoma of the skin includes those cancers which start subcutaneously chiefly on the face, and are derived from misplaced basal-cells of the rete Malpighi. They were formerly called endotheliomata. Coenen, as a result of his researches, believes they are derived from the glandular structures of the skin, the sweat and sebaceous glands, or the hair follicles. They include the so-called rodent ulcers of the face. [W. T.]

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 3, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1806	949	Quincy	7	2
Chicago	—	—	Waltham	7	1
Philadelphia	—	—	Pittsfield	6	1
St. Louis	—	—	Gloucester	3	—
Baltimore	255	135	Brookline	3	1
Cleveland	—	—	North Adams	8	2
Buffalo	—	—	Chicopee	16	11
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	9	—
Washington	—	—	Leominster	7	2
Providence	90	44	Hyde Park	7	3
Boston	224	68	Melrose	3	0
Worcester	36	10	Newburyport	—	—
Fall River	57	49	Woburn	9	3
Cambridge	19	5	Marlboro	4	
Lowell	49	31	Westfield	3	—
Lynn	23	10	Peabody	—	—
New Bedford	36	27	Revere	3	—
Springfield	35	16	Attleboro	5	2
Lawrence	30	19	Clinton	—	—
Somerville	7	2	Adams	—	—
Holyoke	19	16	Gardner	4	3
Brockton	17	6	Milford	—	—
Malden	8	—	Watertown	4	1
Chelsea	24	12	Plymouth	—	—
Salem	15	10	Weymouth	—	—
Newton	13	3	Framingham	2	1
Haverhill	7	1	Southbridge	11	5
Fitchburg	5	4	Wakefield	—	—
Everett	3	3	Webster	—	—
Taunton	18	9			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED AUGUST 7, 1907.

PETTUS, H. J., assistant surgeon-general. Granted leave of absence for twenty-six days from August 12, 1907. August 6, 1907.

WICKES, H. W., passed assistant surgeon. Granted leave of absence for one month from August 7, 1907. August 3, 1907.

WILSON, R. L., passed assistant surgeon. Directed to proceed to Fontainebleau, Miss., for special temporary duty, upon completion of which to rejoin his station at New Orleans.

BAHRENBURG, L. P. H., passed assistant surgeon. Granted leave of absence for seven days from July 15, 1907, under paragraph 191, Service regulations.

ROBERTSON, H. MCG., assistant surgeon. Granted leave of absence for five days from July 25, 1907, under paragraph 191, Service regulations.

MULLAN, E. H., assistant surgeon. Relieved from duty at Perth Amboy Quarantine Station and directed to proceed to Ellis Island for duty. August 1, 1907.

WOLLENBURG, R. A. C., assistant surgeon. Relieved from duty at Detroit, Mich., and directed to proceed to Ellis Island for duty. August 1, 1907.

HERRING, R. A., assistant surgeon. Granted leave of absence for one day in July, 1907, under paragraph 191, Service regulations.

PORTER, J. Y., sanitary inspector. Directed to proceed to Fernandina, Mayport, Carrabelle, and Santa Rosa for special temporary duty, upon completion of which to rejoin his station at Key West, Fla.

DELGADO, J. M., acting assistant surgeon. Granted leave of absence for one day in July, 1907, under paragraph 210, Service regulations.

DUFFY, FRANCIS, acting assistant surgeon. Granted leave of absence for six days from August 5, 1907. August 2, 1907.

ELFERS, J. C., acting assistant surgeon. Granted leave of absence for twenty days from August 3, 1907. August 5, 1907.

HICKS, B. I., acting assistant surgeon. Granted leave of absence for twelve days from August 4, 1907. August 5, 1907.

O'REILLY, W. J., acting assistant surgeon. Granted leave of absence for eight days from August 8, 1907. August 5, 1907.

SAVAGE, W. L., acting assistant surgeon. Granted leave of absence for thirty days from August 4, 1907. August 1, 1907.

SCHWARTZ, LOUIS, acting assistant surgeon. Granted leave of absence for one day in July, 1907, under paragraph 210, Service regulations.

SIMONSON, G. T., acting assistant surgeon. Granted leave of absence for ten days from August 5, 1907. August 7, 1907.

WETMORE, W. O., acting assistant surgeon. Granted leave of absence for seven days from July 7, 1907, under paragraph 210, Service regulations.

WATTERS, M. H., pharmacist. Excused from duty without pay for seventeen days from August 3, 1907. August 1, 1907.

MISKIMON, R. R., pharmacist. Directed to proceed to Wilmington, N. C., reporting to the medical officer in command for duty and assignment to quarters. August 3, 1907.

APPOINTMENTS.

DR. RODERICK W. BROWNE appointed an acting assistant surgeon for duty at Norfolk, Va. August 7, 1907.

ROBERT R. MISKIMON, of D. C., and C. Roy Ott, of Ohio, appointed pharmacists of the third class. August 3, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 17, 1907.

E. P. W. HOUGH acting assistant surgeon. Ordered to Naval Hospital, Annapolis, Md.

A. STUART, passed assistant surgeon. Detached from command of the Naval Hospital, Sitka, Alaska, and ordered home to wait orders.

C. C. GRIEVE, passed assistant surgeon. Detached from the Navy Yard, Portsmouth, N. H., August 31, and ordered to command the Naval Hospital, Sitka, Alaska.

W. D. OWENS, assistant surgeon. Ordered to the Navy Yard, Portsmouth, N. H., and to additional duty on the "Southery," August 21.

E. C. TAYLOR, passed assistant surgeon. Detached from duty at the Navy Recruiting Station, Memphis, Tenn., and ordered home to wait orders.

W. J. ZALESKY, passed assistant surgeon. Ordered to the Navy Recruiting Station, Memphis, Tenn.

J. A. BIELLO, acting assistant surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

J. MCMAHON, pharmacist. Detached from duty at the Navy Yard, New York, N. Y., and ordered to the Naval Hospital, Norfolk, Va.

G. A. LUNG, surgeon. Detached from the "Kentucky" and ordered home to wait orders.

A. R. ALFRED, surgeon. Detached from duty at the Navy Recruiting Station, Pittsburg, Pa., and ordered to the "Wolverine."

A. G. GRUNWELL, surgeon. Detached from the "Wolverine" and ordered to the "Kentucky."

R. E. STOOPS, assistant surgeon. Ordered to the Navy Recruiting Station, Pittsburg, Pa.

K. C. MELHORN, acting assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va.

R. S. BLAKEMAN, passed assistant surgeon. Discharged from treatment at the Naval Hospital, Norfolk, Va.

BOOKS AND PAMPHLETS RECEIVED.

Thirteenth Annual Report of the Board of Health of the State of New Jersey, 1906, and Annual Report of the Bureau of Vital Statistics. Trenton. 1907.

Transactions of the American Pediatric Society. Eighteenth Session, held at Hotel Traymore, Atlantic City, N. J., May 30, 31, and June 1, 1907. New York: E. B. Treat & Co. 1907.

Green's Encyclopedia and Dictionary of Medicine and Surgery, Vol. V. Edinburgh and London: William Green & Sons. 1907.

The Physiology of Alimentation. By Dr. Martin H. Fischer. First edition. Illustrated. New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1907.

Physicians' Manual of the Pharmacopeia and the National Formulary. By C. S. N. Hallberg, Ph.G., M.D., and J. H. Salisbury, A.M., M.D. Chicago: American Medical Association. 1907.

The Conservative Treatment of Chronic Suppuration of the Middle-Ear. By Samuel Theobald, M.D. Reprint.

Indications for the Employment of Adrenalin Chlorid, in Conjunction with Cocain, in Operations on the Eye. By Samuel Theobald, M.D. Reprint.

A Striking Illustration of the Efficacy of Constitutional Measures in Controlling Inflammation of the Mastoid Cells. By Samuel Theobald, M.D. Reprint.

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Address.

THE DIGNITY OF MEDICINE.*

BY IRA J. PROUTY, M.D., KEENE, N. H.

ANOTHER year has rolled around and been added to the life history of this society. Every passing year brings its changes which are noticeable at our annual gatherings. The familiar faces of those long in the ranks are missed one by one, while new countenances are seen, and new voices are heard in discussion and around our banquet board.

I am not unmindful of the honor you have conferred in asking me to preside over this venerable society, for it certainly is an honor to occupy the executive chair which has been so ably filled in the past by men who have achieved national and even international reputation. As I have looked back over the years of more than a century that mark the life of the New Hampshire Medical Society, and have considered the work accomplished by the thoughtful, earnest men who have spent their lives in riding through summer's heat and winter's blasts, over the hills and across the valleys of our rough yet productive state, on their mission to relieve suffering humanity, a feeling of regret has come to me that no more records of their lives and works have been left by them to help and encourage those of younger years.

Our society was the third state medical society to be incorporated. It has on its long list of members nearly all the names that have been prominent in our medical annals. It never has been in such a prosperous condition as at the present time; all of the ten component societies are doing good work in furthering the cause of scientific medicine. I have visited during the past year several of these local societies and have been impressed by the seemingly good fellowship that prevails and the interest taken in the work, as evidenced by the papers and discussions.

There is still missionary work for us to do, for there are two hundred or more physicians in the state who should be added to our already long list of over four hundred. The north county society is the banner one of the state, having the largest percentage of members in proportion to the whole number of physicians in Coos County.

In the early days of the New Hampshire Medical Society and before, the doctor and the minister were looked up to by every one in the community as standing on a higher plane in the possession of knowledge. The parson, with his long straight coat, high cut vest, and sanctimonious bearing, and the doctor, calm, dignified, and always carrying his mysterious leather bag, made the people of the New England village stand in awe of them. Hawthorne has given us in "The Scarlet Letter" a singularly truthful picture of the old-time doctor: "Made up of earnest, studious, thoughtful, quiet years, bestowed faithfully for the increase of knowledge, faithfully, too, for others, caring little for themselves, kind, just, true, and of constant, if not warm, affections."

To-day all this is changed. The people have become better educated, especially in matters pertaining to their own health (although there is still a chance for vast improvement in this direction), so that there is not the difference between the professional man and the community at large that there was at one time. The times have changed; conditions of practice have altered and are altering rapidly. When we look back into the days of old, we find that the ideals which inspired medical men then are our ideals to-day — ideals which are never old, yet always fresh and new.

The custom of opening our meetings with a general address is an appropriate one, for it affords an opportunity to discuss some topics which, although not strictly scientific, are of deep concern to each and every one of us. It is well at times to take a somewhat general survey of our profession, to study its tendencies, and get if possible a clearer vision of what should be its aims and ideals.

I ask your attention for a few moments to the subject of "The Dignity of Medicine."

I suppose no one in this audience will for a moment maintain that our profession holds the position to-day that it did when this society was young. The doctor is not looked upon as he was in the days when he entered the door with his saddlebags or when his sulky turned in at the gate. I desire to speak of the dignity of medicine as shown by its beneficent work, as a great social power in any community, and as spreading everywhere a wholesome influence. This is the particular dignity which appears to me to have declined in recent years and largely ceased to inspire the respect which is due to it. It rests with you and me to help to recover and reconstitute this dignity which in a measure has been lost. Whatever the explanation of the fact, for fact I believe it to be, there can be no doubt that any loss of appreciation of it or prestige is not due to decadence or inefficiency in the service of medicine itself, for the progress has been greater and more beneficial to humanity within the last few decades than during the previous two centuries. We notice on the part of the public either a spirit of indifference or a disposition to be over-critical. The proofs of this are lamentably notorious. The inadequate provisions made for measures of public health, for the prosecution of research, and for the sanitary services generally, all bear witness to a mistrust of the high aims of medicine and an indifference to the unselfish and ill-rewarded labors of our profession. The humane efforts fail to impress people of enlightenment any more than those of ordinary intelligence. Often our most prudent advice is treated with suspicion, and the advisers, although experts in their subjects, receive little serious attention. It might have been expected that with the progress of education there would be a corresponding interest in, and a growing appreciation of, the value of medical science in all communities. The discussion of medical subjects in the public press, instead of enlisting intelligent sympathy with the efforts

* President's address before the New Hampshire State Medical Society, Concord, N. H., May 16, 1907.

of our thinkers and workers, rather tends to place our patients in a wrong attitude towards their medical advisers, and induces a mood which sometimes seriously hampers the treatment of their ailments.

The relations between intelligent patients and physicians are not as satisfactory now as they used to be, and there is apt to be less confidence, if not at times an actual mistrust, on the part of patients which assuredly does not work out for their benefit. The fault must either lie at our own door and concern us individually or it must be a sign of the spirit of the age in which we are living. Thus even modern medicine with all its advantages, improvements, and enlarged resources stands before the public shorn apparently of much of its dignity and the appreciation it formerly enjoyed. A measure of dignity has been accorded to the Church, to the Law, and to Physic, and, as I have said, the latter, in more recent years, has not kept its place. I am almost sure that the former do not continue to hold their places as they once did; we are not, however, concerned with them; they can look out for themselves. It may be that there is a common cause for a decline in the public estimation of all these professions.

There are problems facing us to-day, the solution of which will raise or lower the dignity of our profession in the eyes of the general public.

In his individual capacity the doctor has not been found wanting. Wherever you may go in civilized lands, the physician will be found self-sacrificing, patient and charitable, upholding the honor and dignity of his noble calling. Collectively medical men do not have that influence which we might expect and without which great movements for the welfare of humanity cannot be carried on. A lack of unity has prevented a realization of our hopes, and if we gain and maintain the pre-eminent position to which we are entitled, we must unite for the common good. The present organization of the New Hampshire Medical Society and of the American Medical Association is but a beginning; we must further the interests of these bodies unselfishly, not for ourselves alone, but that we may better fulfill our sacred obligations to mankind.

The people must be educated to a point where they can understand the broad humanitarianism of modern medicine. Society fails to appreciate the priceless gifts to mankind made by preventive medicine and sanitary science. We have failed to secure the support of the mass of the people to much needed sanitary reforms because we have appealed to them as one individual to another without the weight of an authoritative organization.

This great association of medical men is a pregnant fact, and ought to be a powerful active factor in moulding public as well as professional opinion into such lines as should be conducive to public and professional interests. For while with us professional interests must naturally take the first place, it should never be forgotten that the main purpose of our existence as a profession is for the public advantage, and from such a point of view all our actions will be estimated by the world at large. The time has come for the public to be taken into our confidence; if we wish better results we must enlighten the people, for with them lies the final word.

The dignity of the profession, its social and political position, will be materially enhanced when the bonds of fellowship are drawn more closely than they have been in times gone by. When the bulk of the members of the profession take the view that in union there is strength, the means of achieving more complete and practical fusion of the various elements which are now too far sundered will be readily found. Our state society is a representative of the great idea of the unity of medical science. Here we meet on common ground and each member learns from the others and takes home with him to ponder over and use again what he has received from the common stock. Each one of us in our living should seek as far as possible not to forget that as the arteries permeate the whole body and are in uninterrupted communication with each other, so we can only maintain the integrity of medical science by keeping in view the intimate relations and mutual bearings of all the various departments which go to make up the unity of the sciences. The benefits accruing from a large society are many, not only to its members, but to the community at large. When there is the largest attendance and interest there is the greatest degree of unity and good fellowship which is essential to the dignity and usefulness of the profession.

The influence of this society, if judiciously used in establishing and maintaining relations of confidence between the public and our profession, is certain to increase, and when important subjects are under discussion it will be for you, remembering that you are citizens first and doctors afterwards, to formulate your views on the essential points at issue, and then to give a long push, a strong push, a push all together. If we would have our profession respected, we must respect it ourselves by never speaking of it lightly, slightingly, or in a depreciatory manner.

If the medical profession were composed of men of less charity and forbearance, an unappreciative public would be left to their own impotent endeavor to solve the problems of sanitation and protective medicine. Is it any wonder that there is a tendency on the part of some to abandon a thankless undertaking, for it really seems sometimes that in spite of our most loyal efforts it will always be "truth forever on the scaffold, wrong forever on the throne." Why the populace as a rule are less responsive to concerted action on our part than to individual effort can, in my mind, be explained only on the ground that when physicians band together for any accomplishment, even if for the health and sole welfare of the people, they are regarded as a trust, and the public generally is antagonistic to organization.

Compare this prejudice to medical organization with the general approval with which our

commercial bodies are regarded, and the result of such comparisons is almost disheartening. If a board of trade indorses certain legislative enactments for the protection of the financial interests of the community, the masses of the people have sufficient confidence in the integrity of such a board as wisely to rely on and be governed by its indorsement. The press will at once come to its aid and if need be a fund is created for the enterprise.

Let a medical organization, on the other hand, originate or indorse measures which have a vital bearing on the health of the same community and to whom will it look for support? The press is often subsidized by advertising charlatans, and the people, instead of according us their real support, are either indifferent to our efforts in their behalf, or are ready to rise in denunciation of our most honest purposes. The same confidence that is given us as individuals is denied us as an organization. It is our duty to create a healthy public sentiment, to educate the people to realize that we are striving to help them. Throughout our entire country I do not believe there is a law on a statute book passed at the instigation of the medical profession that is not productive of more benefit to the masses of the people than to the physicians themselves.

The unity which has long been desired by many for the profession at large is a unity without uniformity, a bond which allows of the freest individual development, while it serves only as a check to any outgrowths calculated to harm the commonwealth or to injure the neighbor. Such harm or injury may result from sins of omission as well as commission. It is important that in all we do or attempt to do, either as individuals or in combination, we should be studious to avoid, even in appearance, everything which might seem to the non-professional mind to savor of professional advantage, and we should never forget that we are professional men and not tradesmen. Not being wage-earners, we may guard ourselves against being misled into following the methods of those who at times are working for ends which appear selfish and from motives which sometimes seem unworthy.

The quarrels of doctors make a long chapter in the history of medicine. The larger quarrels are becoming less and less intense, and during the last century no new one of moment sprang up, while we can safely predict that in the present century, when science has thoroughly leavened the dough of homeopathy, the great breach of our day will be healed. In too many communities, both large and small, miserable factions prevail, while bickerings and jealousies mar the usefulness and dignity of the profession. Most of the quarrels among doctors are about the non-essentials, small trifles and annoyances — the pin pricks of practice — which perhaps would have tried the patience of Job himself.

The county society or local doctor's club is as professional cement. The meetings in a friendly, social way lead to a free and open discussion in a spirit that refuses to recognize differences of opinion. There is no room for envy, hatred, malice, or uncharitableness. By such gatherings there is brought about an attitude of mind which becomes habitually friendly, and a little of that old time courtesy and dignity which makes a man shrink from wounding another, especially a professional brother.

Much time has been spent uselessly in years gone by in formulating codes of ethics to govern physicians in their attitude towards each other. We should act as one gentleman naturally would to another. Rules and codes of ethics are only necessary for those who have not the instincts of gentlemen. To lay down rules for conduct in their relations with one another is puerile. It is sometimes required to tell boors how to imitate. Their effort at imitation is laudable but always transparent. As Herbert Spencer has well said, "Righteousness expresses of actions what straightness does of lines: and there can no more be two kinds of right action than there can be two kinds of straight lines." The rules for our guidance can all be summed up in that one great and golden rule laid down centuries ago, — "Whatsoever ye would that men should do to you, do ye even so to them."

We must not be surprised if we provoke misgivings on the part of the intelligent public as regards our level headedness and our honesty when we express dogmatically opinions regarding matters and life which are in plain contradiction to all experience and common sense. As in other professions we have in our ranks so-called "faddists" and it must be that they bring reproach upon many others besides themselves. It is not always easy to refute in public such opinions and conduct as I refer to, and most of us have sometimes to fall back on the wise dictum of Bishop Andrews, that "he who tolerates does not necessarily approve." We may be sure that anything approaching extortion or greed must seriously injure the respect which is due our profession.

The dignity of our profession is lowered when a physician's services can be bought at wholesale and peddled out at retail to further commercial ends, thus enabling canvassers and looters to catch members who are overpleased at being led to believe that they will be able to obtain good medical attendance upon the payment of a few dimes per month. It can only be regretted that there are among us such men who will be so misled as to sell themselves to such task-masters and to undertake professional work which they must know is not likely to be of much service to the public upon terms which they must feel cannot be remunerative to themselves. Some of you may say, "This is business." Weir Mitchell well says, "We are not business men; we belong to a profession and sell that which no man can weigh or measure." He further expresses the same thought: "How difficult it is for us to comprehend these men who are born and bred in a commercial atmosphere. They have set ideas and utter absence of tastes or pursuits outside of mere money making. They seem to have in life no other game."

Although, as has been said, we should not make our profession a trade, yet we certainly can, in a dignified way, stop being imposed upon by insurance companies, corporations, including hospitals and individuals, and under the so-called mantle of charity be defrauded out of our just dues. It is not the poor man with the family that asks the doctor to discount his bill, but very often the corporation or man with a good salary tries to impose upon us. We should willingly and at all times give our services to the truly worthy poor, but it must be left to us to decide who are worthy.

The greatest impediment to the dignity and progress of our art is now and ever has been the astonishing credulity of mankind in everything to which mysticism lends its false illumination. The glare of mysticism is too often mistaken for the light of science. In the words of a former president of this society, "Whatever is mysterious, or in the least partakes of the supernatural, forms no part of scientific medicine." "Knowledge comes, but wisdom lingers," and in matters medical the ordinary citizen of to-day has not one bit more sense than the old Romans, whom Lucian scourged for a credulity which made them fall easy victims to the quacks of the time, like the notorious Alexander.

Matthew Arnold defines charlatanism as the "confusing or obliterating the distinctions between excellent and inferior, sound and unsound or only half sound, true and untrue, or only half true." Napoleon one day, when somebody was spoken of in his presence as a charlatan, said: "Charlatan as much as you please, but where is there not charlatanism?" There certainly are charlatans and quacks outside of the profession, and must I say inside as well? If we of the household are not free from charlatanism and quackery, what of the people among whom we work? From the days of the sage of Endor, even the rulers have loved to dabble in it, while the public of all ages has ever revelled in its methods, — to-day as in the time of the Father of Medicine. Plato thus sketches the world-old trait: "And what a delightful life they lead! They are always doctoring and increasing and complicating their disorders and always fancying they will be cured by any nostrum which anybody advises them to try."

All departures from the accepted methods of healing, the breaking away from the conservatism and practices of the past, are not easy. We were schooled with the view that drugs were all-powerful, and consequently have allowed the dignity of our profession to become lowered by not investigating, until within the past few years, the use of remedies that are not drugs. The use of non-medical curative measures has been made prominent by such noisy pretense of skill in their use that reputable physicians have hesitated to take interest or to have confidence. The use of the various forms of electricity, hydrotherapy, massage and diet were practically under the ban, yet to-day we are beginning to see that they are among the most valuable remedies we possess. We should always bear in mind Sydenham's rule, "Whatever is useful is good."

A great feature of modern medicine is the return to psychical methods of treatment, the success of which depends upon the faith of the patient. There is a place in medicine for the practice of systematic mental therapeutics; and by the study of the subject and the employment of it in a dignified way, will result in its being taken out of the hands of "mental healers" and the like, just as the profession took surgery out of the hands of barbers and pretenders.

Faith is the great lever of life; without it, man can do nothing. Faith in us, faith in our drugs and methods, is the great stock in trade of the profession. Galen said: "Confidence and hope do more than physic, — he cures most in whom most are confident." That strange compound of charlatan and philosopher, Paracelsus, encourages his patients "to have good faith, a strong imagination, and they shall find the effects."

We often overlook or else are ignorant of our own faith cures, and are very sensitive about those performed outside the ranks. We must not expect to have a monopoly of this panacea, which is as free as the sun, and which may make every one in certain cases, as was the Lacedemonian of Homer's day, "a good physician out of Nature's grace." Faith in the gods or in the saints cures one, faith in little pills another, hypnotic suggestion a third, faith in a plain common doctor a fourth. The cures in the temples of Æsculapius, the miracles of the saints, the remarkable cures of those noble men, the Jesuit missionaries, the modern miracles at Lourdes and at St. Anne de Beaupré in Quebec, and the workings of the so-called Christian Scientists (no science and very little Christianity) are often genuine and must be taken into account in discussing the foundations of therapeutics. In the words of Osler, "The faith in which we work, the faith, indeed, which is available to-day in every-day life, has its limitations. It will not raise the dead, it will not cure cancer or pneumonia, or knit a bone; but in spite of these restrictions faith is a most precious commodity, without which we should find ourselves very badly off." The faith healing in these days, which goes under the euphonious name of Christian Science, is nothing more than mental suggestion. "The patient is told to be calm and is assured that all will be well: that he must try to aid the healer by believing that what is told him is true; the healer then quietly but firmly asserts and reiterates that there is no pain, no suffering, that it is disappearing, that relief will come, that he is getting well." A recent writer has pointed out that the growth of so-called Christian Science is that which underlies every popular fallacy. Oliver Wendell Holmes outlined very clearly the factors concerned, showing how easily abundant facts can be collected to prove anything whatsoever; how insufficient exalted wisdom, immaculate honesty, and vast general acquirements are to prevent an individual from having the most primitive ideas upon sub-

jects out of his line of thought; and finally demonstrating the boundless credulity and excitability of mankind upon subjects connected with medicine.

There is no profession whose members are less trammelled by precedent, tradition, or prejudice than ours. Every one of us is free to choose his own methods and remedies. No rulings or creeds limit the application of our logic; no councils instruct us where to go for facts. We can go contrary to all usages and introduce revolutionary methods, and the profession welcomes our work if only it is justified by results. In using remedies that are not drugs, and I may say those that are, we must not think one is a cure-all, using it for all the ills that flesh is heir to, for if we do we are resorting to the same quackishmethods of those from whose hands we have wrested these remedies.

The practice of medicine is an art, based on a science, working with science, in science, for science; it has not reached, perhaps never will, the dignity of a complex science with exact laws, like astronomy or engineering; but with the records made in the laboratories it is becoming more exact year by year. We must not rely entirely on the men behind the 'scope. An oft quoted saying of Bismarck's is, "Politics cannot be made in the laboratory: they have everywhere to do with human doings." In an analogous manner we may well say "that medical science cannot be exclusively made in the laboratory; it has always and everywhere to do with human beings." Dr. L. Emmet Holt has recently well said, "The men of the laboratory to-day dominate medical thought. They form sort of an oligarchy, to whose decrees those who study medicine at the bedside only must needs submit, often with a subconscious feeling of their own inferiority. I cannot myself resist the opinion that the man of the microscope and culture tube just now occupies a place of too great importance, at least in the minds of the medical student and younger practitioner."

Nothing has given a greater uplift to medical thought and practice, and especially to diagnosis, than the laboratory. Its aid is indispensable, but it has its own proper place. The work done at the bedside has, I am sure, been undervalued, and as a natural result the pendulum has begun its backward swing, and from both sides of the Atlantic come voices cautioning against the undue magnification of the laboratory at the expense of other aids to diagnosis. Cabot has well said, "After the student has learned to open his eyes and see, he must learn to shut them and think." The object of all medical science is to help and to heal, and the object of all medical, artistic and scientific thinking is therapeutic thinking. The peculiar problem that confronts us as physicians is not so much the disease as it is the diseased patient, and the significance of medicine is to be sought in this object, — to protect the highest possessions of human beings, life and health.

We must ever study at the bedside and not rely wholly on the findings in the laboratory. The knowledge acquired by both is the only practical knowledge. One is almost useless without the other. The alpha and omega of practical medicine is well expressed by Froude: "The knowledge which a man can use is the only real knowledge, the only knowledge which has life and growth in it, and converts itself into practical power. The rest hangs like dust about the brain or dries like rain drops off the stones."

Those of you who have recently entered the profession will find as those longer in the service have found that Bunyan expressed it only too truthfully when he said, "It happens to us, as it happeneth to wayfaring men: sometimes our way is clean, sometimes foul: sometimes up hill, sometimes down hill: we are seldom at a certainty. The wind is not always at our backs, nor is every one a friend that we meet on the way."

Let us strive as individuals and as a society for the honor and dignity of our profession, impressed by the importance of the problems which we as its ministers have to solve. In this we but follow out the aims and ideals of those who have gone before and blazed the way.

Original Articles.

THE THREE LONG-CONTINUED FEVERS OF NEW ENGLAND.*

BY RICHARD C. CABOT, M.D., BOSTON.

Members of the New Hampshire Medical Society:

Mr. President: I wish first to express my gratitude to you for asking me to be present here, and to say that I am very sensible of that honor. I wish also to congratulate you upon the address to which you have just listened, to which I have listened with great pleasure and with most cordial agreement. I should like to refer particularly to the concluding portions in which your president has referred to the limitations of certain methods commonly classed as laboratory methods. I fully agree with him as to the limitations of those methods and as to the necessity of their being controlled always by bedside knowledge of the case.

I have chosen the subject which I am to put before you to-day because it has impressed itself upon me considerably in private work and in hospital practice, that there are in New England but three long, common, continued fevers, and also that there are some of the profession who do not realize this fact. I have spoken of my proposed address to a number of my colleagues in Boston, and most of them wondered what those three fevers would turn out to be. As long as that is so, and as long as the facts show that considerably over 90% of all long-continued fevers are due to one of three diseases it seems to be worth while to emphasize the point, to insist upon those three fevers and to speak of their diagnosis.

I must first define my terms. By "long fever" I mean a fever which lasts two weeks or more. That usage is arbitrary, but for the purposes

* Read before the New Hampshire State Medical Society, Concord, N. H., May 16, 1907.

of discussion is convenient. A continued fever is, of course, a fever which does not touch normal at any time during twenty-four hours, and by fever itself (I am going simply by temperature measurements) I mean any disease in which the temperature is continuously above 99° F. I have limited my title to fevers of New England because if one goes into the tropics one meets with a number of other fevers with which you and I do not deal. But as statistics (which I shall give you in a few moments) show, there are but three long, continued fevers of New England — *typhoid, tuberculosis, sepsis.*

My attention was first drawn to this fact by a series of discussions which I hold once a week with the students of Harvard Medical School, in which we take all the post-mortem examinations of the Massachusetts General Hospital and compare the findings with the clinical records. We found that in this particular series that 97% of all cases in which there was a fever of more than two weeks turned out to be typhoid, tuberculosis or sepsis. From those figures I decided to go over a much larger number of cases from private practice and from the records of the Massachusetts General Hospital, and found that the ampler statistics confirmed the earlier impressions. That these three fevers would together make up 90% of all the long fevers in any part of New England I have no doubt, but within *this 90%* the number of cases of tuberculosis, of sepsis or of typhoid would obviously vary a good deal according to the local conditions.

In a hospital like the Massachusetts General, for example, where we never take pulmonary tuberculosis except by mistake, we have, of course, a much smaller percentage of tuberculosis than in some general hospitals. In hospitals where the "surgical" cases greatly outnumber the "medical," the proportion of sepsis of one variety and another would be very much greater than in any hospital where "medical" cases are in the majority; but still, the general proposition with which I have started would be the same in any community, in any hospital, viz.: that 90% or more of the long fevers are due to one of these three diseases.

I will now give you the figures in detail. Out of 784 cases which I studied for the purpose of this paper at the Massachusetts General Hospital, we had 586 cases of typhoid. The next largest item was sepsis, with 70 cases, or 9%, and then tuberculosis with 54 cases or 7%. I must define a little more exactly what I mean by sepsis. I mean all the diseases due to the pus-forming bacteria which are prone to exert their influence in any part of the body. I include, of course, abscesses and wounds, deep or superficial; puerperal fevers, appendicitis, fevers originating in the gall bladder and the pelvis; also those hidden, dubious fevers associated with vegetations on the heart valves, commonly called ulcerative or malignant endocarditis. Those here grouped together are essentially the same in their etiology and their general prognosis, except where we can remove the cause.

Next to these three common fevers comes *meningitis;* although it is usually associated with a short fever or with one which often touches normal, it may produce a continued fever; and 27 of our cases of cerebrospinal meningitis were of this type.

Next to that group comes *influenza*, 10 cases. No doubt this number would have been much larger if I had not made the arbitrary limit of two weeks. Most cases have a shorter limit than two weeks. I have no doubt some of these diagnoses are wrong. The diagnosis of influenza is very difficult to make at present, and it is possible some of these 10 cases were mistakes.

Acute articular rheumatism, 10 cases. It may turn out to be true that this disease is due to a rather mild infection with pyogenic, pus-forming cocci; if so these cases would be classed with the other types of sepsis.

Then come 5 cases of *leucemia*, and 4 cases of *malignant abscess* with fever. After that, *cirrhosis* and *gonorrhea*, 2 cases each, and then 13 other diseases, one of each.

LONG FEVERS.

Typhoid,	586	
Tuberculosis,	54	
Sepsis,	70	
	—	710 or 90%
Meningitis,	27	
Influenza,	10	
Acute rheumatism,	9	
Leucemia,	5	
Cancer,	4	
Syphilis,	2	
Cirrhosis,	2	
Gonorrhea,	2	
"Scattering,"	13	74 or 10%
Total,	784	

Simply to know the facts shown in this table is of importance, because of the help it gives us in diagnosis by exclusion. If you have a continued fever, a long fever, you are pretty sure it must be one of three things. Then if you can exclude two of those three — as you often can — your diagnosis is made.

My next point is that the diagnosis of these fevers is *not only possible but important* because treatment makes so great a difference here. There are many diseases whose diagnosis is difficult but not especially important, because we cannot do much for them if we succeed in making the diagnosis. Your president touched on that point when he said that all scientific information, if it is to be important, must be scientific information that we can *use*. Many diagnoses of the rarer affections of the central nervous system, which take up nearly a third of the great books on diagnosis, do not seem to me very important, because we cannot do anything for these diseases, but the diagnosis of these three fevers is *important* because the treatment is important. And further than that, the diagnosis is usually *possible*, provided we think of it. The majority of mistakes in diagnosis which I have known in regard to these three fevers have been due to the fact that the infection which turned out to be the cause, was

not considered at all. If these causes are considered, they can usually be recognized.

A few words on the diagnosis of these fevers. I think it is first of all important to realize that there is no such thing as "simple continued" fever, "slow fever," or "low fever," or "bilous fever," or "gastric fever." Among the fevers which I have seen in consultation, a considerable number have been diagnosed as some one of these things. The fever, it is true, is often "slow," but is not properly diagnosed by recognizing that fact. It may be also "low," but that is not enough to characterize it. It often has important gastric symptoms, but those are not the cause of the fever.

We get down to business, then, by excluding once for all these exploded superstitions.

Another fact of importance is that in New England, aside from cases brought in from the tropics, there are no cases of malaria which run an obstinate, continued fever. All the malarial fevers in New England are intermittent fevers and yield readily to quinine. I have seen in consultation a considerable number of cases which had been diagnosed as malaria, despite the fact that they did not yield to large doses of quinine given over considerable periods of time. It seems to me that this argues an ignorance of the fact that all malarias originating in New England yield readily and quickly to quinine.

There are no long, continued fevers due to hysteria, neurasthenia or any other affection of the mind, and there are no such fevers due to constipation. These suppositions come up frequently in differential diagnoses, but I think they should be excluded. Disorders of the nervous system give rise to fever, but not to long, continued fever.

I will begin with the diagnosis of fevers due to tuberculosis. I have seen a number of mistakes and made a number of mistakes in this matter, by reason, first of all, of paying too much attention to the symptoms and not enough to the signs; too much attention to what the patient says and not enough to what we find on examination. Three times I have seen, in consultation, cases of pulmonary tuberculosis which were not recognized because the patient did not cough. It seems not to be realized by a considerable number of physicians that now and then a case of pulmonary tuberculosis may go on very far without any cough. I remember especially a case of diabetes in which the post-mortem showed that two-thirds of one lung was entirely solidified by tuberculosis; yet there was never any cough at all. These cases are very exceptional. I do not mean to say that the average patient with tuberculosis does not cough and cough early and often, but it does not seem necessary to say that we can have pulmonary tuberculosis easily recognizable under the stethoscope and on examination, but not giving rise to any cough. Such a case is sometimes diagnosed as typhoid, or "low," "continued" or "gastric" fever, when the patient ought to be treated and treated vigorously for tuberculosis if he is to be saved.

Sometime ago I saw in my office a young man who had recently coughed up blood. He had felt perfectly well before that and had no cough. I examined his chest rather superficially, because I didn't want to stir up more hemorrhage by deep breathing. I found nothing. I had no considerable doubt that he had tuberculosis of the lungs, yet found no signs in his lungs, nothing but the hemorrhage. But since experience shows that the vast majority of all hemorrhages from the lungs, in the absence of traumatism, are due to tuberculosis, I told him he should treat himself as if he had tuberculosis. He went home and two days after that I had a delighted message from his physician. He said: "You'll be glad to hear that Frank has developed typhoid fever; it is nothing worse." He was running, indeed, a continued high fever exactly like typhoid. I said, "Are you sure it is typhoid?" He said, "Oh, yes, no doubt about it." I heard nothing more about the case for a couple of weeks when the physician called me up: "Won't you come out and see that patient again?" I went out and found half of one lung solidified with tuberculosis. Well, nobody could have wanted more than that boy's physician did to do the right thing, but it was an awful mistake. There the boy was in the house; all the windows shut; getting the worst possible treatment. The boy himself was intelligent and as soon as he knew what the matter was he insisted on being kept out of doors; his temperature came down within a week, and I believe he is going to get well in spite of the tragic mistake of his physician.

These cases of tuberculosis of the lungs without cough are diagnosed in my experience as one of three things: either they are called malaria — and that they are called quite frequently because of chills — or they are called typhoid, or else the doctor refuses to call — doesn't call — them anything; just says, "He's got a fever."

Let us consider first the cases characterized by chills. It certainly should be recognized, and I think it generally is, that not only may we have chills in tuberculosis of the lungs without cough, but we may have *a chill every day at the same hour*. There are many practitioners who, when they have a case of chills every day at the same hour, will give quinine and assume the diagnosis of malaria, no matter what the physical signs are. In these cases the mistake is always to be avoided by examination of the blood. No one can have malaria and repeated chills without showing parasites in the peripheral blood. They are always to be found and the test is easy, quick and decisive.

I might, perhaps, say a word about the method of examination for tuberculosis, because, although it is a well-worn subject, we are learning more all the time about it. I learned something a short time ago during a visit to Dr. Trudeau at Saranac. You know the old procedure for bringing out crackling râles at an apex, by getting the patient to cough and then breathe just after it. A patient came to me the other day to be examined for lung trouble. After I had made her cough and breathe in this way she said: "I can always

tell whether a man who examines my lungs knows how to do it; if he doesn't make me cough and then breathe, I know he doesn't know his business." I thought I would pass that on to you for a hint to be remembered. Luckily, I happened to know that point and so didn't fall under her disapproval.

Dr. Trudeau and his assistants not only make the patient breathe hard and cough, but prescribe first a long inspiration, then full expiration, and a cough at the end of expiration. That they say will stir up râles and make them audible when nothing else will do it. That was a procedure I hadn't known and therefore I pass it on to you. The patient should always be examined in a quiet room; that is one of the necessities of the case and it is not always obtained. One can hear in a quiet room sounds which one misses otherwise. It is a good idea to wet the bowl of the stethoscope with water so it can't possibly slip upon the skin. Vaseline and grease are often used, but water does just as well and is much cleaner.

I pass to typhoid and its diagnosis. The history of the Spanish War of 1898 brought out very forcibly the fact that the practitioners who served then as contract physicians did not know typhoid when they saw it. When looking into that fact and the reasons for it, the commission appointed for the purpose seemed to believe that the reason these cases were not recognized was the lack of local symptoms. "These soldiers," the contract physicians argued, "have no diarrhea; they have no distention; they have no pain in the abdomen; how can they have typhoid? They feel pretty well and they are walking about." So the case was called "simple continued fever" and "gastric fever" and so on. I think it still needs to be said that typhoid in the majority of cases presents the picture of a patient who has fever *and nothing to show for it;* a fever and nothing local to account for it. I have been struck many times, when I was going over the abdomen of a typhoid patient, by hearing him say, "What are you feeling around there for? I am sick in my head and chest; I am not sick in my belly." The patient does not usually complain of his belly. He may have distention, but if the case is mild he usually does not, and in the great majority of cases he does not have diarrhea. Large statistics show that 75% of the cases of typhoid have regular bowels or constipation. This is natural, because it has become more and more obvious that typhoid is not a disease of the intestines at all, any more than diphtheria is a disease of the throat. It is a disease which has lesions in the intestines, but a disease in which bacteria are circulating through every organ in the body. It seems to me that the cultivation of the bacteria from the blood ought to become, more than it has, a routine method of diagnosis, although, of course, it needs a laboratory to have it properly carried out. Every considerable town ought to have such a laboratory where men can send to get the cultures and have their cases studied out from the bacteriological point of view.

Typhoid, then, being a general disease and not a local disease, a general bacterial infection, we ought not to expect local symptoms, ought not to think of it as a disease of the intestines. On the other hand, it seems to me that the importance of *negative evidence* is very great. Typhoid fever is oftenest the fever in which you do not find anything on physical examination. You may find enlarged spleen; you may find rose spots, but in many cases you don't find either. *You have a fever and nothing to show for it.* If you have the time and ability to make the blood tests, you do find something sooner or later in 99% of all cases, but still it is one of the fevers that show nothing on ordinary physical examination. We are realizing more and more, I think, that people may not only have typhoid fever and walk about with it, but may have typhoid and *no symptoms whatsoever*. The cultures from the gall bladder, taken at operations for gallstones, show typhoid bacilli so frequently in patients who never knew they had any fever, that I cannot help believing that people often have typhoid and do not know it. It has turned out that these poeple that have typhoid and do not know it may carry around bacilli in their gall bladders, which are emptied from the gall bladder into the intestines, and hence that the feces constantly contain bacilli, and are a menace to the community. I have no doubt that in some cases which cannot be traced to water or milk, such a perpetual "carrier of typhoid" is at the root of the whole trouble.[1]

Now, lastly, sepsis. Defined as I have defined it, sepsis is due to pyogenic cocci which may exert an effect on any part of the body. The great majority of such cases are diagnosed rightly. The sepsis has an obvious focus somewhere. The occasional mistakes of diagnosis are most apt to concern the liver. Abscess of the liver, whatever its source, very often gives rise to no local symptoms whatsoever; no pain, no tenderness; nothing but a fever. I remember two such cases taken for typhoid because of the apparently negative physical examination, cases which only at the end of a number of weeks showed their true character by the burrowing of pus to the surface. In the depths of the liver there are no nerves, therefore no sensation, no pain until the abscess burrows to the surface where the nerves are, and there gives rise to tenderness and pain.

I suppose we have all seen puzzling symptoms in cases following appendicitis in which the temperature had gone down to normal; then later the patient began to run a little fever, again with nothing to show for it on physical examination; perhaps a little bit of dullness in the right back, a little bit of what you might think was thickened pleura, but not enough to account for the fever. Those cases of unexplained fever after operations for appendicitis turn out generally to be abscess of the liver. The affections of the gall bladder are complicated in the same way by liver abscess, although the diagnosis is usually more obvious. Frequent in persons who have been in the tropics are the liver infections resulting from dysentery. Then there are the subphrenic abscesses burrow-

[1] See Jour. of the Am. Med. Asso., June 10, 1907.

ing under the diaphragm and originating most often in a perforating gastric ulcer. Those sometimes give no local symptoms. Temperature chills and leucocytosis may show us that there is pus somewhere, but give no idea where it is. Then there are the recognized cases of empyema following pneumonia. It has been well said that the vast majority of cases of unresolved pneumonia are really empyema.[2] I believe the number of cases of unresolved pneumonia is very small. I have seen them in post-mortem, but the vast majority of pneumonia cases that last more than ten days are empyema unrecognized. In these cases exploratory puncture ought to set us right, but I believe the diagnosis of empyema should never be excluded unless the chest has been opened, a rib removed and a thorough exploration made.

The continued fevers connected with the heart are often overlooked because they do not often give rise to any marked cardiac symptoms. The patient does not complain of his heart; he has heart murmurs and high leucocyte count, but he runs a simple fever often exactly like a typhoid and does not seem very sick. I think the term "malignant endocarditis" is responsible for wrong diagnosis in many cases. Endocarditis is pretty bad anyway, and if it is "malignant endocarditis" we think the patient must be very sick, yet many of them are not very sick. They are bright, feel well, eat well, sleep well, and you can't help believing that they must have some less serious disease with some less bad-sounding name; yet they will go on for weeks with nothing but a simple fever and finally die of exhaustion. In the diagnosis of these cases we depend on the presence of murmurs in the heart, the shifting of those murmurs from time to time, and the continuous presence of a high leucocyte count, which would not be present in typhoid, nor in uncomplicated tuberculosis.

In conclusion, then, summing up what I have said, I think it is important to realize the fact implied in my title, that there are but three common, long, continued fevers of this vicinity. Second, that these fevers, though often confused with each other and so unrecognized, can be recognized in the vast majority of cases provided we think of them at all and look for them carefully by the ordinary methods of physical diagnosis.

DISCUSSION.

Discussion of Dr. R. C. Cabot's paper opened by Dr. William T. Smith, Hanover.

We are all of us under obligation to Dr. Cabot for his very clear work on diagnosis, and he has added very much to that to-day, to my mind, by this discussion.

It is very gratifying to me to hear what he has said about fevers, for I have always felt that this was about as mystifying a portion of the ground that we are on as any. I think we have all found in our own experience many cases which we are unable to diagnose, and we have found many cases — all of us, undoubtedly — of wrong diagnosis between these different fevers, and where the names that he has suggested have been applied without any rational ground. I wish that what he has told us to-day might be incorporated in our textbooks. The trouble, of course, with the textbooks is that they undertake to cover the whole ground for all parts of the country, and the medical student in studying about fevers takes them all in as about on the same plane, and when he comes to apply what he has learned he is very apt to apply a name for a disease which is found only in the tropics to a condition which he finds in New England. It seems to me that what Dr. Cabot said about the limited number of continued fevers is perfectly true, and that we ought to recognize that fact, that it ought to be impressed on the minds of young men beginning practice.

Another thing that this paper makes me wish is that we might have blood examinations done free of charge by the state laboratory. Now our state laboratory is entirely capable of doing that work and does that work constantly, but it has to be paid for, and the result of that is that in many cases where the patient is poor and is not able to pay the fee, the blood examination is neglected where it ought to be made, where it would clear up without any further trouble the diagnosis. That is the practical point which I shall carry in my mind until we secure for ourselves at public expense the opportunity of having the blood of our patients examined at any time.

[2] See articles by Vickery in Bost. Med. and Surg. Journ., 1907.

THE ORGANIZATION OF TUBERCULOSIS CLASSES.*

BY JOSEPH H. PRATT, M.D., BOSTON.

The Emmanuel Church Tuberculosis Class was organized July 1, 1905. Since that time fifty-four consumptives have been members of the class. Seventeen have already recovered and returned to work. The disease has been arrested in 75% of the incipient and moderately advanced cases. The first three members who joined the class within a few weeks of its formation have been at work over a year. Although they had advanced tuberculosis the disease became entirely arrested, and they were restored to their full working capacity.

A description of the class method of treating pulmonary tuberculosis will appear in the next volume of the Transactions of the National Association for the Study and Prevention of Tuberculosis.

Three additional tuberculosis classes have been formed in Boston. The Suburban Tuberculosis Class was started by Dr. John B. Hawes in January, 1906. It was designed for patients who lived too far from the city to be visited by the nurse of the Emmanuel Church Class. The Arlington Street Church Tuberculosis Class is under the charge of Dr. N. K. Wood. It has been in existence over a year. Recently a class intended for principally Jewish patients was started by Dr. H. Linenthal and Dr. L. Mendelsohn of the Mt. Sinai Dispensary. A friendly visitor was selected who could speak Yiddish. The Cambridge Tuberculosis Class was organized by the Cambridge Anti-Tuberculosis Society in 1906. About six months ago classes were started in New York, Philadelphia and Baltimore, and more recently in Lynn and Brockton. Steps have been taken to form classes in Washington, Pittsburg, Troy and Los Angeles.

* Read before The Massachusetts Medical Society, June 11, 1907.

There are several advantages of the class method of home treatment over sanatorium treatment. It is more economical. There is no expensive plant to be erected and maintained. The money appropriated can be at once utilized for the care of consumptives. If the patient regains his health in his own climate and in his own home it is easier for him to keep up the hygienic life after he has returned to work. With a class of small size the physician and nurse can give more attention to the individual patients than is possible in most sanatoria. Early cases in other members of the family are more readily detected. The educational effect on the patient's friends and neighbors is greater.

The disadvantages are equally apparent. It is easier to secure the necessary control so essential to successful treatment in a sanatorium where the patients are always under the eye of the directing physician and the nurse. Better food and better care can usually be given a poor patient in a well managed sanatorium than in his own home.

In organizing a class the first task is to secure its adequate financial support. The Rev. Dr. Worcester of Emmanuel Church has raised about $1,000.00 a year for our class. This has been obtained by Sunday collections and by individual gifts. The first grant of $500.00 was obtained from a fund known as the Parish purse which is placed at the disposal of the rector. Facilities for leading the out-of-door life, such as tents, reclining chairs and blankets have been provided and medical care and the services of a paid nurse furnished.

We have not attempted to treat homeless and destitute consumptives. Some of our members have been aided by small allowances, and in a few instances board and room rent have been paid. It has been a constant aim to place the responsibility of the support of our members on their own families. Our work could have been made more efficient, not so much by increasing our membership as by increasing the financial aid to some of our poorer members during the period after recovery while suitable work was being sought. One of our class to whom we made an allowance of $1.00 a week and who also received $2.00 weekly for a short time from a Jewish charity was so pressed for money that he was forced to pawn his watch and his wife's wedding ring. Knowing the small amount of money in our treasury he took this step rather than apply to us for more aid. A graduate with no resources and a child dependent upon her was forced to accept a situation as waitress in a restaurant where the hours of work were from five in the morning until ten in the evening.

Dr. F. T. Fulton secured the necessary funds for starting the Providence Class from the Social Service Club of the Central Congregational Church of that city. He arranged for a representative of the Emmanuel Church Tuberculosis Class to give an account of the class method and the results obtained at the church. A series of lantern slides was shown and charts and records kept by the members of the class were exhibited. After this demonstration the club voted to appropriate $500.00 for the work.

A Boston woman, not connected with Emmanuel Church, became interested in the movement and arranged a small home meeting to which four of her friends were invited. After the method of work had been explained these five ladies subscribed $500.00 for the formation of a new class, the success of which in the hands of Dr. N. K. Wood was such that at the end of six months the Arlington Street Church was willing to assume the maintenance of the class. Dr. J. B. Hawes secured both money and volunteer visitors for the Suburban Tuberculosis Class by publishing an appeal in the Boston *Transcript*. Ex-Governor Douglas announced the day after the formation of the Brockton Tuberculosis Class that he would finance the enterprise and gave at the same time $1,000.00. The establishment of the Mt. Sinai Tuberculosis Class was made possible by Mr. N. L. Amster's gift of $500.00 for this purpose.

A young woman in New York raised among her friends sufficient money to start the first tuberculosis class in that city. It has already done a remarkable work. The director, Dr. W. L. Niles, has demonstrated that tuberculosis can be successfully treated by the class method under unfavorable conditions in the crowded sections of New York City. Dr. David Riesman's class in Philadelphia has been supported by one gentleman whom he interested in the movement. The expenses of the Baltimore class have been largely borne by Dr. Dencker, who in addition has given his entire time to the work. In Lynn circulars calling attention to the class method were sent out and by this means sufficient money was obtained to start a class. In Troy a society for the home treatment of tuberculosis was established under the patronage of influential men. Many people became interested, so that $1,200.00 have already been secured by five and ten dollar subscriptions. A copy of the circular issued by this organization will be found at the end of this paper.

These facts are presented to point out the various ways in which classes may be supported.

The co-operation of all the local charitable, religious and fraternal organizations should be secured. Although in a large city such as Boston a class may be maintained by a single church, it will be the better plan in most instances to have the work started under the auspices of some organization that can look for support to the entire community.

Failure will certainly result unless the services of a physician and friendly visitor are secured who are familiar with every detail of the modern treatment of consumption. Our work would have been impossible if we had not had from the beginning the services of a paid friendly visitor. She was expected to devote half of each day to the work. As a matter of fact our friendly visitor, Mrs. Oreon, has frequently insisted on working many additional hours. Our success has been chiefly due to her tireless devotion. I

recently learned that she called daily for two weeks on one patient before she could induce him to sleep out of doors. He was an ignorant man and his friends and relatives warned him that death would surely follow if he made the attempt, as it was mid-winter. He has been sleeping in the fresh air for over a year and has not only gained the sixty pounds he had lost but the disease has been arrested and he has returned to work.

It is not necessary that the friendly visitor should be a trained nurse. Constitutional energy, tact and sympathy are the essentials. There have been several notable instances in which the work of the friendly visitor has been most successfully carried out by young women who have had no hospital training. Volunteer visitors can be of great assistance. We have had two volunteers who, working with the friendly visitor, have rendered efficient service in the solution of the social and financial problems. The social aspects need to be studied. They are quite distinct from the medical side. Students of sociology should join heartily with medical men in this work. The medical direction should be in the hands of one physician. He should be paid a salary sufficient to enable him to devote a fair portion of his time to the class and make a special study of the disease he is called upon to treat. A few weeks spent at Saranac or at the Phipps Institute in Philadelphia would be invaluable. Those in charge of the Boston classes will be glad to give instruction in the class method. It has been found that the tuberculosis classes have furnished an excellent opportunity for the physicians connected with them to acquire a good clinical knowledge of pulmonary tuberculosis.

Much depends on the selection of cases. The fact that all of our 9 incipient cases have recovered while 7 of the 10 far advanced cases have died indicates the value of early diagnosis and prompt treatment. Treatment is never begun too early; it is often begun too late. For the reason that the disease may be so insidious in its development and because recovery is not only more sure but more rapid when the patient is at rest, we have insisted that all of our patients should cease their work and devote themselves entirely to the task of getting well.

The present wave of optimism in regard to the treatment of consumption has its dangers. Many physicians make the fatal mistake of minimizing the seriousness of the disease in its early stages to both themselves and their patients. I am often asked by physicians to treat in our tuberculosis class consumptives "who are not sick enough to give up their work" or "who cannot afford to stop working." I am glad of this opportunity of pointing out to the members of The Massachusetts Medical Society their great responsibility in this matter. To let a man continue at work after the diagnosis of active pulmonary tuberculosis has been made is as foolish as it would be to let a fire burn unchecked until it became serious before calling the fire department. Doctors and social workers frequently speak of their inability to persuade consumptives to leave their work and take the rest treatment. This failure is usually due in the first place to the consumptive's ignorance of his true condition and, secondly, to his lack of financial resources. We have overcome these obstacles by telling him the truth and by promising that if he will join the class, keep absolutely quiet, sleep out of doors and follow our guidance in all things we will see that the ways and means are furnished.

When a suspected case is submitted to us a definite diagnosis is always made before treatment is instituted. If tubercle bacilli cannot be demonstrated in the sputum, the tuberculin test is tried. I have seen no harm result from tuberculin in the hundred or more cases in which I have used it. The initial dose I employed is $\frac{1}{10}$ of a mgm. If there is no reaction a second injection of 1 mgm. is given, and if necessary a third test with 10 mgm. is made. The details of preparing the dilutions will be found in the recent paper of my associates, Dr. Hawes and Dr. Floyd.[1] After the diagnosis has been made the patient is told that he has consumption, and if unwilling to heed our advice the seriousness of the disease is impressed upon him. In the old days, I have frequently overheard a conversation somewhat as follows between the hospital externe and a patient in whose sputum tubercle bacilli had just been discovered. "We find a little trouble in your lungs," began the doctor speaking rather hesitatingly, "I don't suppose you could give up your work for a few weeks and go to the Rutland Sanatorium, could you?" "No," said the patient, "I have a family to support and no money." "That is too had," said the doctor, "it would be better if you could stop work and go to Rutland, but as you cannot do that be sure and stay out of doors all you can, eat plenty of food, take this medicine for your cough and come back and see me in two weeks."

I never saw cures produced by this method, and my experience accords with that of my colleagues.

Since the tuberculosis class was established I cannot recall a single instance in which we have failed to induce a man of fair intelligence and good habits to stop work and to take the treatment. If a man tells me he has a wife and children dependent upon his weekly earnings and no money on hand I advise him to explain the situation to his relatives. Often there is a brother-in-law who is earning fair wages. I try to impress the following facts upon the sick man: the disease has its clutches upon him. Soon his strength will begin to fail and within a few months in all probability he will be too ill and weak to work. Then he will tax the resources of his family to the utmost. Often some one who might be earning money must remain at home to care for him. In addition to the expenses of his illness there is the increased financial burden attending death and burial. After the breadwinner is dead, provision must be made for the wife and children, not for months but for years. It is cheaper for the consumptive to get

[1] Bost. Med. and Surg. Jour., 1907, clvi, p. 694.

well than to die. This plain speaking may seem brutal, but it is often the means of saving life. It is a line of argument that rarely fails with the relatives. If they refuse to loan money, we have been able to secure from other sources the necessary funds to enable the patient to take the treatment.

In Oxford, Providence and Brockton several large manufacturers have provided free treatment in sanatoria and at home for consumptives in their employ. Dr. F. T. Fulton, of Providence, has found that those men who began treatment before constitutional symptoms had developed were able to return to work within a few months. Among these there has been thus far no recurrence of the disease.

Our greatest need in the Emmanuel Church Tuberculosis Class is provision for the exceptional cases who need prolonged financial aid, and for the after-care of our graduates. Many difficulties, financial and sociological, are presenting themselves. The medical problems have been largely solved. Much could be accomplished by giving a small allowance to the individuals in whom the disease has been arrested while they are seeking suitable employment. In Bardswell's valuable monograph on the Consumptive Working Man will be found the report of an after-care committee, as it is called, which was organized by the Kelling Sanatorium at Holt, Norfolk. This committee sent a printed leaflet to employers of labor, a copy of which will be found appended to this paper. There is urgent need that similar committees be formed in this country. In England employment was furnished chiefly by people with gardens and by farmers. Light work indoors is better for a consumptive with arrested disease than heavy work out of doors. If obliged to spend the day in-doors the individual with arrested disease should not fail to sleep in the open air.

The establishment of a loan fund for the benefit of individuals of good character in the curable stage of the disease would be of great economic and philanthropic value. The administration of such a fund might be quite independent from that of the tuberculosis class. In some cases the issue between life and death depends upon whether or not there is an available fund of a few dollars a week. Our patients are of entirely different type from those familiar to charity workers. In the majority of cases the disease had been the indirect result of over-work. They are thrifty and are able to live quite comfortably on little money. The fact that they carry out the class treatment faithfully for weeks and months indicates that they have perseverance. If such a fund is established loans should be made only after the needs of a case have been most carefully investigated. As only a limited number of cases can be helped at first preference should be given to those who can be most quickly and surely returned to the ranks of breadwinners. Patients who have used alcohol to excess should be viewed with suspicion. An intemperate man under our care who made speedy and marked improvement went on a debauch with the first money he earned after returning to work. Experience with young married women is also disappointing, for the reason that pregnancy and child-birth are so apt to be associated with a lighting-up of the disease.

If there are children in the family and the resources are scanty it is well to find temporary homes for them in the country, especially if the mother is tuberculous. In this work we have been greatly aided by the Children's Mission. Not only does the removal of children lessen the difficulties of caring for the family, but it often saves the children from becoming victims of the disease. We found unsuspected cases of tuberculosis among the children in no less than twenty per cent of the families represented in the class at the present time.

Attention should be called to the establishment in New York of a special employment bureau for the handicapped.[2]

If after-care committees be formed in connection with our tuberculosis classes it is probable they would proceed on somewhat similar lines. An effort should be made to interest the employers of labor in this work. The positions of watchmen or care-takers should be specially sought for our graduates. Honest, sober and reliable men could be furnished.

Most of our graduates have been able to return to their former employment, and yet maintain their health. If arrest is secured in advanced cases only light work under favorable conditions should be attempted. It is even more difficult to secure suitable work for women than for men.

A specific instance of the difficulties that confront us may be given. In November, 1906, a type-setter entered the class with incipient phthisis. He owned a little property in England, and although he earned fair wages had saved no money. His wife was a nervous invalid, unable to take boarders, and there were two children to be cared for. We turned to Mr. A. M. Wilson, the efficient secretary of the Boston Society for the Relief and Control of Tuberculosis, and he was able to obtain a weekly loan of $10.00 for a period of about two months. The property in England was not regarded as good security, and he was unable to dispose of it. After this relief failed a lady in the Emmanuel Parish loaned the same amount weekly for four months longer. The disease in the lungs became completely arrested. About six weeks ago, just as he was on the point of returning to work, symptoms of tuberculosis of the spine developed. For nearly a month he received free treatment in the wards and convalescent home of the Massachusetts General Hospital. Last week we were told by the orthopedic surgeon to whom we referred the case that an apparatus to hold the spine immobile must be worn for three months more. The outlook for complete recovery is good. He feels well and strong, but so long as he is obliged to wear the plaster cast he will be unable to do his work as a "job compositor." The printing firm for whom he worked has held

[2] See the interesting paper by T. C. Janeway and C. C. Carstens in *Charities*, Feb. 3, 1906.

a place for him. What shall be done in this case? There is the rent to be paid and the family to be fed. At the last meeting of the class the friendly visitor reported that there was no food in the house and he had to borrow a nickel for his car fare from a neighbor. I am glad to report that he received this week $10.00 from the class fund. Only temporary aid can be furnished from this source. Inasmuch as the total amount of money at our disposal is not over $20.00 a week it can readily be seen that we cannot pay out $10.00 weekly to one individual for any length of time. What better memorial for a relative or friend could there be than the establishment of a loan fund for cases such as this?

To show what can be done with a small amount of money the case of a young seamstress may be cited. She consulted a physician in the spring of 1906 on account of a cough. He found tubercle bacilli in her sputum and referred her to our class. She had only $50.00, and her parents who lived in Nova Scotia were too poor to help her. She was boarding with a friend who charged her only $2.50 a week. We gave her this amount weekly for four months and loaned her a tent and reclining chair. She enjoyed the privileges of the Parker Hill Day Sanatorium where lunches and a good dinner were furnished free. She entirely recovered and returned to her home in Nova Scotia for the winter. She writes that she has been perfectly well since graduating from the class and expects to return to work soon. Who can doubt that the loan of $40.00 saved her life?

The social and economic aspects of this movement are assuming increasing importance. Is it not possible that in the practical work of the tuberculosis crusade the sociological and medical departments of our universities may combine? The churches with their organized forces might furnish great aid if they were awake to their opportunity.

Although it has been demonstrated that the class method furnishes an economical and efficient means of treating tuberculosis in the homes of the poor, three important points should be borne in mind if the tuberculosis classes are to be successful. First, they should be directed by physicians familiar with the details of the modern treatment, and the right women should be selected for the position of friendly visitor. Second, there should be adequate funds for the support of the class. Third, every physician in the community should learn to recognize the disease in its early stages and to refer the cases for treatment without delay.

Appendix.

Copy of the circular issued by the after-care committee of the Kelling Sanatorium.

To Employers of Labor and Others Interested in the Working Class Consumptive:

It is felt that it should be more generally recognized that, in dealing with consumption, sanatorium treatment is only the first step.

Of suitable cases, treated at a sufficiently early stage, a large proportion are discharged fit for work, but if the good gained at the sanatorium is to be maintained it is essential that the patient should, on leaving, be able to go to suitable employment in suitable surroundings.

The Committee of the Kelling Open-Air Sanatorium, feeling the vital importance of this side of the work, have appointed a special sub-committee called the After-Care Committee, who consider the future of each of the sanatorium patients, and where necessary endeavour to obtain suitable work for him when he leaves such employment and surroundings.

Work is provided for a certain number at the sanatorium itself, but as it is impossible to provide in this way for more than a very small fraction of those discharged, the committee now venture to appeal to employers of labour to assist them.

They can help, it is suggested, in two ways:

1. By being willing now and then to find temporary light work for a man.

2. By occasionally giving one of our men the chance of a suitable permanent position.

In the first case the idea would be to enable the man for a short time to earn a bare living wage in suitable surroundings while he looked about for permanent work, and, in the second, to provide him, at no doubt a moderate wage, with suitable permanent employment.

Our men are almost all skilled in some trade, and we would obtain in every case a character from the previous employer.

It would be clearly understood that no responsibility whatever as to the man's health should be undertaken by the new employer; if a man so employed should break down, the committee would like to be informed, and would do all they could to secure him further treatment.

The employment may be either out of doors or in pure air in-doors. It should not involve any great physical effort, nor should it require to be done against time or high pressure.

The following list contains a few of the employments suggested:

Light work about a farm or garden.
Driving.
Care-taking.
Agency work as, for instance, insurance agency, rent collecting, or some form of travelling, etc.
Clerical work if in good conditions.
Estate work, such as light carpentering, looking after an engine, etc.
Motor car driving.
Check taking.
Door keeping, and many others.

The risk of infection has been mentioned as an objection, but there is no doubt that it has been greatly exaggerated and, in any case, it is certain that a man who has been treated at a sanatorium, whose symptoms have disappeared and who has been taught the precautions, is not only unlikely to be a source of infection, but is actually a missionary of health to all with whom he comes in contact.

The preferential consideration given to subscribers with respect to the admission of patients into the sanatorium will be given to any employers who will consent to give, instead of a subscription in money, this invaluable practical aid.

May we write to you when we want employment or a man? Please reply to ——, the Hon. Sec., Kelling Open-Air Sanatorium, Holt, Norfolk.

Copy of the appeal for the Society for the Home Treatment of Consumption in Troy.

"We must care for the consumptive in the right place, in the right way, and at the right time until he is cured; instead of, as now, in the wrong place, in the

wrong way, and at the wrong time until he is dead." — PRYOR.

There has been, during the last few years, a great revival of interest among both physicians and business men in the question of consumption. Every one is coming to realize that this plague is the most dangerous of any kind that we have to contend with.

It kills, every year, more people than any other disease. Last year there were 240 deaths from consumption in Troy, an average of 20 each month. The great majority of the deaths were among the poor between the ages of 20 to 40 years, the time of life when men and women are most essential to the support of their families and of their children. They cannot go away or receive the benefits of treatment in a sanatorium, therefore they must be cared for at home.

In many cities of the United States measures have been taken to fight this disease and the results have been remarkable. We are going to fight consumption in Troy and we ask for your interest and assistance.

A class is to be formed of consumptives who cannot afford to leave home to go to a sanatorium or to pay for continuous medical care. The society has secured the voluntary services of Dr. H. W. Carey as physician-in-charge, and Dr. H. C. Gordinier and Dr. J. B. Harvie as consultants.

The class will be under the care of the physician and a nurse who will instruct the patients in the three essentials for recovery — *Rest, Living Out of Doors and Proper Food.*

The class meets once each week for examination by the physician, and each member is visited at the home by the nurse, who will see that the instructions are properly carried out. This is the method used so successfully in Boston, Providence and New York, where, in most instances, the progress of the disease has been arrested, in many instances cured.

The cost of maintaining the class is $50.00 a patient a year, the expenditure being limited strictly to the purchase of tents, cot-beds and reclining chairs to enable the patient to live comfortably out of doors and to pay for the services of the nurse. In order to meet the expenses of carrying on the work for a year we must have $1,000.00 in hand and we ask your aid by a contribution of $10.00.

(Signed) PAUL COOK,
FRANK E. HOWE,
EDWARD MURPHY, 2d,
GEORGE ALFRED CLUETT,
LELAND THOMPSON,
EDGAR H. BETTS,
Committee.

DISCUSSION.

DR. JOHN B. HAWES, of Boston: I have been associated with Dr. Pratt right from the start, and from the very beginning I was tremendously impressed with what this class method can accomplish. There is one thing which he has not mentioned, and which I think is one of the principal factors in successfully handling these cases, and that is, the personal element. Every one of these patients who have come here to-day is a personal friend of mine. They are being taught how to help themselves. As Dr. Pratt's class increased the need of another class was apparent, and there was another started at the Massachusetts General Hospital under my charge, and this was called " the suburban class," of which there are now three. The patients sleep out of doors wherever possible, and come to the hospital for the class work once a week when they are able, where we talk over the details of the past week. The first patient shown here by Dr. Pratt had been under my care at the hospital for six weeks, and nothing seemed to be accomplished under the old out-patient system until Dr. Pratt commenced this system of personal supervision of the patients in their homes, and to the hard, individual, personal work which he has put into it, I think the credit is largely due.

DR. I. J. CLARK, of Haverhill: A year ago there was a committee appointed in Haverhill to look into this matter, and to further the treatment as much as possible. This committee included members from Lawrence, Newburyport and our own town. I am very glad to report that we have organized a society in Haverhill, and solicited funds from our people. We have officered it with about all the doctors and clergymen, and I have patterned it as far as possible after Dr. Pratt's method. It does not seem practicable to have a class at present, but I have suggested it to the supervisor. I intend to work with him in carrying out the details. We are also to have the state exhibit. It seems to me a movement which every town of any size should take up. It is surprising to see how much interest in this is shown by the public. I do not think the matter will lack for means. I am very much interested in this matter, and will say that we find it very difficult to carry out the rest treatment. I had a patient recently who by careful supervision and treatment had become much better with no fever, but he insisted on going camping out and fishing trips, and he had a relapse. He did very well, however, under the treatment while he remained quiet.

DR. DAVID TOWNSEND, of Brookline: There is one phase of the work which has not been mentioned, the " Day Camp." The Boston Association for the Relief and Control of Tuberculosis has operated such a camp the past two summers on Parker Hill in Roxbury through the courtesy of the Robert Brigham trustees. This summer the camp has been established on the estate bought for the proposed Municipal Consumptive Hospital through the courtesy of the Municipal Hospital trustees. The camp is modeled after those in Germany, particularly those in Berlin. The patients come for the day only, they arrive early in the morning and go home late in the afternoon. They are given two lunches, one at ten, the other at four o'clock, and a dinner in the middle of the day. Each patient is examined once a month, and weighed once a week; his pulse and temperature taken twice a day. The aim of the officials of the camp is to know each patient intimately, and to encourage him to confide in them. His day at the camp is regulated and everything done to remove all worry and anxiety. He is kept under careful supervision. Such a camp may be readily attached to a hospital, and can be run at a moderate expense as has been proved by the Good Samaritan Hospital, in Boston, the past year. A day camp is of value as it removes for a time the source of infection from the community and the home; it enables some cases to obtain admission to a sanatorium which could not otherwise go; it enables cases to obtain proper care which, although suitable, for some reason cannot go to a sanatorium; it obviates in some cases the necessity; it helps to complete the cure in some cases which have been discharged from a sanatorium. It is also a value on educational lines. As to the permanent good which results I can only say that of the cases present at the camp in the season of 1905, one third are able to work all or a part of the day. One point which I would like to emphasize is the importance of a complete examination of all the members of a family in which there is a tuberculous patient. In this way we are enabled to detect the disease in the earliest stages, and to take proper steps to prevent its spread.

DR. A. C. GETCHELL, of Worcester: One other point should be touched upon at this time it seems to me. It

is the matter of ways and means. Dr. Pratt's results are very encouraging and his work is of great value. Can others in other places do as good work? He has the material resources of a large church and a well supported tuberculosis organization at his disposal. Looking to our work in Worcester we have neither; nor, so far as I can see, are we likely to have. On the other hand it is quite within the range of probability that one of our large hospitals may soon make proper provisions for poor consumptives. As a practical measure I think we will sooner provide suitable care for these unfortunate persons by putting our main energies upon utilizing the equipment of existing institutions with such slight additions as may be necessary. As has been said, Dr. Pratt's personality is an important element of his success. While this has contributed so largely to his work it cannot be counted on with definiteness in other places. To my mind the great value of his work, and I sincerely hope he will keep on with it, is a demonstration of what can be done at home with the moderately poor consumptives. But I feel that we shall make no material progress in caring for the very poor, the most dangerous class of all, until we provide adequate institutional care for them.

Dr. C. S. Millet, of Brockton: One word about the personality of Dr. Pratt, about which we have heard so much this afternoon. If there is anything in taking a real heart-felt interest in your patient, in paying attention to detail and insisting upon entire obedience on the part of the one most interested, which the rest of us can't imitate, then, of course, Dr. Pratt's personality is certainly the most important factor in the kind of work which he has originated.

Otherwise there is nothing about this work that any man here can't do.

MEDICAL INSPECTORS: THEIR FUNCTION.*

BY CHARLES HARRINGTON, M.D., BOSTON.

Yesterday there was passed by the Senate to a third reading, a bill, which already has passed the House of Representatives, entitled, "An Act to Provide for the Establishment of Health Districts and the Appointment of Inspectors of Health."[1] The bill was first reported in the House on May 1, by the Committee on Public Health, after full consideration of so much of the annual report of the Chief of the Massachusetts District Police as relates to the manufacture of clothing in tenement houses; so much of the Governor's address as relates to medical examination of minors in factories; a petition for legislation relative to the spread of tuberculosis; a petition for legislation to provide for the transfer of certain powers and duties of the inspection department of the District Police to the State Board of Health; a petition for legislation to provide for proper sanitation, ventilation and light in factories and shops and for the appointment of medical inspectors; a petition for legislation to prohibit overcrowding and bad air in factories and workshops; and a petition that medical inspectors be appointed throughout the Commonwealth.

Should the bill become law, it will be the duty of the State Board of Health to "divide the Commonwealth into not more than fifteen districts to be known as health districts, in such a manner as it may deem proper and necessary for the carrying out of the purposes of the [this] act"; and, this having been done, it will devolve upon the Governor to appoint in each such district "one practical and discreet person, learned in the science of medicine and hygiene, to be state inspector of health in such district." The appointees will hold office for five years, but may be removed by the Governor and Council at any time.

The duties of the inspectors will be so varied and extensive as to make the positions anything but sinecures, and in most districts their proper performance will demand of the incumbents practically their entire time and will involve constant travel from place to place. The bill provides, in the first place, that each inspector "shall inform himself respecting the sanitary condition of his district and concerning all influences dangerous to the public health or threatening to affect the same." This alone will be no small task, for although the area of the Commonwealth, in comparison with that of almost all other states of the Union, is small, the 15 districts together will include 33 incorporated cities and 321 towns, and each district, therefore, must contain a considerable population, divided among not a few distinct communities, large and small, urban and rural, manufacturing, agricultural, residential and mixed. In order, therefore, to inform himself and keep informed as to the sanitary condition of his district, and to carry out the duty with which he is specifically charged in the next clause, to "gather all information possible concerning the prevalence of tuberculosis and other diseases dangerous to the public health within his district," he must keep in touch with all of the local health authorities thereof, watch the incidence of communicable diseases in each city and town, inquire into their causes, be prepared to suggest preventive measures and to "take such steps as, after consultation with the State Board of Health and the local health authorities, shall be deemed advisable for their eradication."

Impressed with the value of the medical inspection of school children, the attention of his Excellency the Governor was drawn to the advisability of extending the same protection to minors employed in factories, under conditions which, in very many cases, are far more inimical to health than the conditions to which those confined for shorter daily periods in schoolrooms are subjected; and the matter was made the subject of an earnest recommendation in his inaugural address. If the bill becomes law, it will be the duty of each inspector to have an eye on all employed minors, to examine them as to their health, and, whenever advisable or necessary, to call their ill-health or physical unfitness to the attention of their parents or employers and of the State Board of Health. In some districts this duty will make large demands upon the inspectors' time, for in many manufactures large numbers of minors find employment in rooms where they are exposed to influences which tend

* Read before The Massachusetts Medical Society, June 11, 1907.

[1] The bill was enacted in both houses, and was signed by the Governor on June 19.

to break down their resistance to disease, and especially to tuberculosis.

A third duty imposed upon the inspectors is that of enforcing, under the direction of the State Board of Health and in place of the inspection department of the District Police, the provisions of existing laws relative to ventilation, light and cleanliness of factories; to providing suitable seats for women employed in manufacturing, mechanical, or mercantile establishments; to the employment of minors in the manufacture of acids; to proper water-closets for factories and workshops; to defective sanitary arrangements, drains and water supplies; to nuisances; to cleanliness, ventilation and provision for water-closets in public buildings and schoolhouses; to manufacture of clothing in dwelling houses and tenements; to providing pure water for employees; to installing hoods, suction pipes and fans or blowers where dry grinding on emery wheels is carried on; and to the maintenance of suitable dressing rooms and wash rooms in foundries. In other words, every manufacturing establishment, every public building and every schoolhouse will be under the sanitary supervision of the health inspector of the district in which it lies, and it will be the duty of that officer to visit each such place with reasonable frequency, to report upon its condition and to enforce the law relating to any defect or omission.

In addition to the duties specifically mentioned in the bill, the inspectors will be required to perform such other duties as the State Board of Health — under whose general supervision they will be — may from time to time determine. They will be required to keep records of their proceedings and observations, to submit annual reports to the board, and from time to time to furnish the board with information concerning conditions affecting the public health in their repective districts; and whenever they send written suggestions to local authorities they shall send copies thereof to the board.

From this brief résumé, one may well understand that for the proper and adequate performance of the various duties imposed upon them the incumbents of the positions must necessarily be men of good medical training and experience; of good physique, for the work will be arduous; of good judgment in sanitary matters, and endowed with that most necessary qualification, tact.

DISCUSSION.

DR. H. L. CHASE, of Brookline: I only rise to express a hope that members of the profession will make suggestions to the Governor as to the appointment of suitable men for these very important offices of inspector.

DR. W. J. SLEEPER, of Westford: I indorse what Dr. Harrington has said, and it seems to me that this matter of factory and health inspection should very properly be under the supervision of the Board of Health, and not under the District Police as it has been so many years. It is not the function of the police, and it has not always been carried out in the wise way it should be. While their intentions were good they lacked the necessary qualifications that scientific knowledge would give.

In answer to DR. HENRY JACKSON'S question as to whether much of the work could not be done by non-medical men, DR. HARRINGTON answered: An effort was made to induce the committee to strike out the word "medicine" and insert in place thereof the word "sanitation"; but inasmuch as the work of the proposed inspectors is very largely medical and requires medical training the committee declined to make the change and decided that the word "medicine" should be retained.

It is true that some of the work which the inspectors will have to perform can be done by others than graduates in medicine, especially that having to do with inspection of factories. As a matter of fact the graduate of an engineering school is likely to be a better judge of ventilating apparatus than the average medical man. The medical man knows when ventilation is defective, but may not know how to direct changes to bring about improvement. Again, it does not require a man skilled in medicine to point out that a given atmosphere is overcharged with dust and fumes. On the other hand, one of the most important duties of the proposed inspectors is to examine into the health of all minors employed in factories. Such an examination is beyond the power of the most gifted engineer, unless he has had a medical training.

It must be understood that this bill was based upon a large number of petitions indorsed by a number of different interests. In the first place, there were those who sought to take the factory inspection out of the hands of the District Police, and prominent among these were leaders of the labor unions, who asserted before the committee that until the inspection of factories was taken out of the hands of the District Police and put under men with scientific training they could not hope for sanitary improvement of factories. Other bodies interested were those working for the suppression of tuberculosis, and it will be noted that this disease is specifically mentioned in the bill, it being one of the duties of the inspectors to inform themselves concerning the prevalence of tuberculosis and other diseases dangerous to the public health, and to suggest methods of combating the same. There were others who for many years have wished to have the state divided into health districts, with medical officers of health such as are employed in a number of states, and in Great Britain and other foreign countries. Attempts so to divide the state have hitherto met with no success, and it would probably have been absolutely impossible to secure legislation appointing medical officers of health without a combination of interest such as came into being this year.

With reference to the point that it does not require a medical man to do some of the work of the proposed inspectors, let me call attention to the fact that there is in the bill a clause which empowers the State Board of Health to employ such sanitary experts as may be needed; this has reference to ventilation and other matters involving a knowledge of engineering.

DR. H. L. DEARING, of Braintree: In connection with what Dr. Harrington has said, I wish to say that in Braintree the inspection of the schools and factories has been carried on by three public-spirited physicians, and from our experience it seems very plain to us that the medical man is the only man who is fitted to make these inspections properly. In our investigations we have found that the floors of the factories are in very bad, in fact often filthy, condition. Before inspection the floors were washed up twice a year, now they are washed up twice a week. The danger of drinking out of the same cup is well illustrated by this example

which I will cite. One of the large employers of the town came to me with a sore on the lip, which he and I also felt sure came from using the same cup as the employees. He told me that after that he would see that there was proper medical inspection of his factory.

The chairman, DR. A. T. CABOT, of Boston: It seems to me that it is not only the duty of the members of the associated committees to recommend to the Governor capable medical men to serve as inspectors, but that it is also their duty to ally themselves with the inspectors when appointed, and to assist them in every possible way.

FACTORY INSPECTION.*

BY FRANK G. WHEATLEY, M.D., NORTH ABINGTON, MASS.

LEGISLATION to protect the public health has for many years been the settled policy of this Commonwealth. Every year the legislature enacts new laws or amends old ones. While in many cases changes in law have not notably improved conditions still the general trend of legislation has been helpful. Perhaps the last two or three years have been more than usually fruitful in protective legislation. The legislation leading to recent investigations of health conditions in industrial life by the State Board of Health has been of especial value, largely because of the intelligent methods of investigation adopted by the very able and efficient secretary of the board. Competent men were selected to do this work, and the commercial side of the problem, that is, the employers' interests, were duly considered. As a result of these investigations we have a certain amount of valuable information that may be made a basis for a more intelligent appreciation of the problem. The conditions discovered were in many cases fairly good, but in a discouragingly large number distinctly bad and, on the whole, the theory that a large number of municipalities have local boards of health, either incompetent or unwilling to do their duty, seems to be established. A necessary inference from this condition is that it is incumbent upon the Commonwealth in some way to come to the rescue, and it is hoped that pending legislation, of which it may be premature as yet to speak, may accomplish a great deal along this line. Factory inspection as a phase of the general health question is every year becoming more important. This because not only is the total number of factory employees increasing but the small workshop employing comparatively few people is giving place to the mammoth plant where thousands work under the same roof.

I propose to consider briefly the three groups of people which the subject naturally suggests and the effects of such grouping upon the general subject. These groups are (*a*) Employers; (*b*) Employees; (*c*) The General Public.

To the employer of labor factory inspection has in many cases come to be looked upon with disfavor. Arbitrary regulations enforced by ignorant and tactless inspectors, the interference with one's private affairs and additional expense are probably the most potent reasons for this state of affairs. I do not believe that the average employer objects to the establishment of reasonable sanitary regulations. He is too intelligent a man not to know that the employee whose environment is all that it should be in regard to pure air, proper temperature, proper light, proper toilet accommodations and freedom from exposure to contagious disease is of more value to him than the employee whose environment is unhealthy. I believe that the average employer, if approached in the right way, will prove a help rather than a hindrance to efficient factory inspection. In other words I think he needs education along health lines rather than additional legislation. Added to his interest as a manufacturer is his interest as a large tax payer in the general health of the community. In many cases the nature of the work done in the factory is such that under the most favorable conditions health is somewhat endangered; but I am inclined to believe that the so-called dangerous employments have been unduly advertised, and that inventive genius has and will continue to minimize the evil. There are, however, certain obstacles to the production of ideal health conditions in thickly settled communities that are well nigh insuperable under present conditions. I refer to the disposal of waste in communities where sewerage is not furnished by the municipality. My attention has recently been called to a case of this kind where an ideal handling of waste by the manufacturer would be so expensive as to be prohibitive. In such a case great care should be exercised to so handle the matter as to command the approval of intelligent public sentiment.

The employee is, of course, theoretically in favor of rigid factory inspection, and is, I think, as a rule willing to do his part to make it a success. Quite a large percentage, however, while apparently taking delight in seeing the employer compelled to spend money for sanitary appliances, are the first to abuse the facilities given them. Then, too, restrictions in cases of contagious disease are likely to prove unpopular. Here education along sanitary lines is also needed.

To the public factory inspection is of vital interest. The enormous expense which poor health brings upon the community, to say nothing of the humanitarian side of the question, should awaken the interest of every public-spirited citizen in the subject. Then, too, the product of the factory has in so many cases a bearing upon the health of the consumer that the public cannot afford to allow it to be prepared under unhealthy conditions. I want to impress upon every medical man present the importance of the subject, and to suggest that you can by your personal efforts do a great deal to popularize and make effective scientific factory inspection. The medical man above all others is in a position to educate public sentiment along such lines. If the Commonwealth is to inaugurate an efficient factory inspection it must have an enlightened public sentiment in favor of such inspection.

In the crusade against tuberculosis now so well under way in the state, intelligent factory

* Read before The Massachusetts Medical Society, June 11, 1907.

inspection is an important factor. The state has just made a large appropriation for hospitals for the treatment of tubercular patients. Let us hope that in another decade we shall have so lessened the number of those thus afflicted that the hospitals will be poorly patronized.

It is interesting in this connection to note the work that is being done outside the state along the same lines. Pennsylvania has just appropriated one million dollars with which to fight the white plague, and even our diminutive neighbor, Rhode Island, comes bravely to the front with an appropriation of three quarters of a million. With the work done in Germany recently you are all doubtless familiar. There seems to be a general awakening all along the line, and it is for us, the medical men of the old Bay State, to see to it that our beloved Commonwealth is in the very forefront of the battle.

DISCUSSION.

The Chairman, DR. A. T. CABOT, of Boston: The subject of factory inspection is now before us for discussion and is one which we should all consider carefully on account of its effect in prevention of tuberculosis. We should urge adequate factory inspection and try to enlist the help of employers to obtain it. Rhode Island has taken steps toward factory inspection which I think we might study with interest and profit. In their experience with factory inspection they have found that one of the most satisfactory inspectors is the foreman who is always in the workroom with the hands. He does not know all the symptoms of consumption, perhaps, but he knows a cough when he hears it, and after hearing a man cough day after day, he is able to advise such a man to go to the doctor for examination. It is the cases which are early discovered which can be sent to a sanitarium. Those are the cases which come back to the factories, and are living examples to the workmen of the value to them of factory inspection.

DR. C. S. MILLET, of Brockton: In the city of Brockton during the past six months I have been trying to carry out this line of work in the so-called Walk-Over Shoe Factory, and all parties concerned — that is, the members of the firm, the superintendents of the different factories and the employees — have been willing and even anxious to aid me in every way.

In talking to the foremen, I have tried to tell them what to look for in their efforts to determine whether or not a man is probably affected and should have his lungs examined. The objective symptoms which seem to be most frequently the result of a tuberculous infection are four in number, and named in order are, hemorrhage, cough, emaciation and pallor.

First, hemorrhage: Any spitting of blood, no matter how slight, should always be sufficient grounds for a careful physical examination. Persons who raise blood are quite apt to conceal it, if possible, probably because of the curiosity and excitement which the sight of blood always arouses; hence, the foremen should always follow up the scent if they perceive any blood upon the floor anywhere about the factory.

Second, cough: Osler has said that a cough which lasts over three weeks is very suspicious; and certainly if this symptom, even though it may be insignificant in character, shows the least tendency towards chronicity, the origin must be determined.

Third, emaciation: If a man is thinner than he should be compared with his height, or if he has recently lost weight to an appreciable degree without apparent cause, then again it is of the greatest importance to discover whether or not he has tuberculosis.

Fourth, pallor: This symptom one should always consider at any rate suggestive enough to demand an explanation. It may be due to an actual anemia, as shown by the test for hemoglobin, or it may be caused by an unnatural condition of the circulation through the skin; and in either case the cause is so often tuberculosis that a physician must be absolutely certain as to its source before he can exclude the disease in question.

In conclusion, I would like to say that this work of seeking out cases of tuberculosis among mill and factory operatives must always be done with caution and sometimes even with secrecy, in order not to make it possible for the other hands to shun or ridicule a fellow-workman who has been subjected to an examination.

DR. W. J. SLEEPER, of Westford: I think that factory inspection will do a great deal to blot out the great white plague in that it will call attention early to any trouble in the chest; and I think also that it is very important to secure the co-operation of the employee.

The increase in speed in the factories, while it produces an increase of production, is certainly a detriment to the employee, and I see no way of correcting the condition except by means of the two weeks' vacation in the summer time. It seems to me that the giving of vacations for the purpose of recreation and change of scene should be encouraged by our Society.

DR. ELEANOR WAY-ALLEN, of Walpole: In Walpole a committee has been formed for the relief and control of tuberculosis, and we have found that people co-operate with us very well. We have put up "No Spitting" signs and are recommending men and women to physicians if we find they are failing in health. The largest employer has a physician at his own expense to examine patients. We have found that working with the foremen is a very successful method.

DR. J. C. PITTA, of New Bedford: In New Bedford, as you all know, there are many large factories, and they are a long way from the most progressive methods of fighting this disease. There is not a great deal of inspection. A large number of the people come from my country (Portugal). Last year there were over 120 sent back because they had tuberculosis. I tried to organize a society for the protection of our people, and we have succeeded in doing something. Some of them have been sent to the State Sanitarium at Rutland, and the bills paid by our Society. We have a nurse who goes around and takes their temperatures and gives them good advice. We think we have done much work, but could do more if we had the assistance of other societies.

I am also a member of the District Committee in New Bedford, and for quite a number of months we have not had a meeting, due mostly to the fact that the president of the committee was sick, and afterwards was so busy that he could not give the time to it, and we got somewhat discouraged. Still we have done quite a good work after all. We succeeded in getting a tuberculosis exhibit in City Hall, and it was attended by quite a large number of people of the community. Most of the patients sent back to the old country and most of the patients attended by this society have been mill hands. Many of them drink from the came cup, and they are constantly in a dusty and overheated atmosphere.

IT is reported that several cases of anthrax have been discovered among the cows in dairies in Orange County, N. Y., and that a number of cows have died of the disease. The state veterinarian has ordered the isolation of all cattle exposed, and is making great efforts to stamp out the disease.— *New York Med. Jour.*

Boston City Hospital.

CLINICAL MEETING OF THE STAFF, DEC. 20, 1907.

A CASE OF MULTIPLE OPERATIONS FOR ABDOMINAL ADHESIONS.

BY F. B. LUND, M.D.

L. R., aged thirty-six, colored, had been operated upon in Philadelphia eleven years ago for uterine fibroids. Three years later she was operated upon at the Roosevelt Hospital in New York, for acute obstruction by bands, and again, soon after that, for chronic obstruction. Five years ago she was operated upon for a large ventral hernia by the writer, and soon afterward by Dr. J. C. Munro, for chronic obstruction, due to adhesions. Dr. Munro had some difficulty to find any free abdominal cavity to work in, owing to the extent and character of the adhesions, but finally was able to make a Murphy button anastomosis between the lower part of the ileum and the sigmoid. This operation relieved her so that she was able to go back to work. She enjoyed fair health and worked as a cook until recently, when she was sent to the hospital by Dr. Courtney, suffering from abdominal pain, distention and constipation. I operated upon a small ventral hernia in the right iliac region without relief. Her distention and discomfort continue, and further operation is proposed in a few days.

A few days later this was performed. The entire lower abdomen was found filled with intestines adherent to each other and to the abdominal wall, so that no real abdominal cavity could be gotten into until the incision was carried into the epigastrium along the border of the left rectus. Only about two feet of free intestine was found, starting from the beginning of the jejunum. With great pains and care, separating coil from coil and fold of mesentery from fold, about seven feet of the small intestine were freed. The loop of the sigmoid was found, but appeared to be obstructed at the pelvic brim, so that anastomosis with this, it was thought, would be unsatisfactory. The lower sigmoid and upper part of the rectum were so buried beneath the coils of small intestine, that it was impossible to free and bring them up. The finger introduced as high as possible per anum passed the valves and seemed to enter the lower sigmoid. At any rate, as far up as I could reach, the rectum was unobstructed, even somewhat dilated. The half of a Murphy button was carried up as far as possible into the rectum in a pair of long curved clamps, and by making the rectal wall prominent with this, it was possible to dissect the coils of small intestine away from above so as to come down upon it. The other half of the button was then introduced into the lowest coil of small intestine, which had been freed, about seven feet from the beginning of the jejunum, and the rectum was cut from above, so as to let the inner cylinder of the button project through it. Then by pushing down the upper half of the button, it was possible to effect an ileo-rectostomy in the bottom of the pelvis without sutures and with a minimum of soiling. It was recognized that by this procedure the entire large intestine was placed out of commission, and possibly hardly enough small intestine left to maintain nutrition, but it was necessary to get by the obstruction, and this was the only way to do it, except by an enterostomy, and the disadvantages of a permanent enterostomy of the ileum are too obvious to dwell upon. The abdomen was sewn without drainage. The wound was a long one along the outer border of the left rectus. The veins supplying the rectus were found and left intact.

The patient did well at first, and the distention was relieved, though she had three or four liquid movements a day, owing to the loss of the drying function of the large intestine. The button was passed in about two weeks. After about a month distention and vomiting appeared and rectal feeding had to be resorted to. This was tolerated for a short time only, and then small amounts by mouth were begun. Now (Feb. 15) there is no distention, the patient is being fed by mouth, and seems to be improving a little. The recent distention is undoubtedly due to the tying up by adhesions of the little bowel she has left. No further operation seems possible, and the question of her ultimate survival, with the limited amount of badly crippled intestine she has left, seems rather likely to be decided against her.

TWO CASES OF INTRALIGAMENTOUS FIBRO-MYOMA OF THE UTERUS, AND THE METHOD EMPLOYED TO CONTROL BLEEDING FROM THE BED OF THE TUMOR IN THE BROAD LIGAMENT.

BY C. M. GREEN, M.D.

Case I. J. B., aged fifty, had had two children and three miscarriages. For three months she had had irregular, profuse uterine hemorrhage; and for two months obstinate constipation, obviously due to the pressure of a fibroid tumor which completely filled the pelvis. At operation a sessile growth, two to three inches in diameter, was found at the right cornu, the corpus uteri was of about normal size, but growing from the supravaginal cervix was an intraligamentous mass as large as a fetal head. The broad ligaments were laid open and the tumor removed with great difficulty. There was considerable oozing from separated adhesions. Some surgeons control bleeding in these cases by gauze pressure-drains, an opening being made into the vagina for removal, and the gauze covered in by closing the peritoneum. The reporter believes that a better way is to secure hemostasis, and at the same time to obliterate the cavity in the broad ligaments, by applying several tier sutures, and this method was followed in the two cases reported.

There was no post-operative hemorrhage in this case; but the patient died of shock and exhaustion on the second day.

Case II. J. L., thirty-nine, single, had a large, multiple-fibroid uterus extending above the umbilicus, and the chief symptom was pain. There was a large, intraligamentous mass growing from below the peritoneum; this was enucleated, supravaginal amputation of the uterus was done, the broad-ligament cavity was obliterated by suture, and covered with peritoneum. This case has made an uninterrupted recovery, and will be discharged in a few days.

Dr. Green also showed an unmarried girl of eighteen, on whom he had operated, whose case was interesting from its rarity, — procidentia of the uterus in a nullipara. Two years previously, when sixteen years old, she had lifted a wash-boiler filled with clothes, and as a result, apparently, she suffered prolapsus uteri, so that the cervix protruded from the vulva. After unsuccessful treatment with pessaries in the Out-Patient Department, she entered the hospital, when the uterus was found retroverted and retroflexed, and it protruded from the vulva on straining. It was thought best to perform ventral suspension. At operation both ovaries were found cystic, and were resected. After the usual convalescence, examination shows, with the patient in the erect posture, that the uterus is in normal axis and position.

Referring to the subject of the conservative surgery of the ovaries and Fallopian tubes, Dr. Green reported a case from his service, on whom

he had operated in 1903 and 1904, and whose subsequent history he had recently learned:

R. F., aged twenty-nine, married six years, IV-para, entered the hospital Nov. 16, 1903, on account of backache and constant vaginal discharge. The uterus was retroverted, the right tube swollen, and the cervix torn. Curettage and bilateral trachelorrhaphy were performed, and the patient was discharged, apparently well, on Dec. 7.

Twelve days later, the patient returned, on account of pain in the left lower abdominal quadrant, and a diagnosis of salpingitis was made. At this time the husband acknowledged that he had gonorrhea. The abdomen was opened, and the left appendages were removed. The right tube, although swollen and congested, was pervious, and it was left *in situ*. The cystic right ovary was resected, the uterus was suspended, and the patient was discharged well, Jan. 31, 1904. It was thought at the time that the patient ran some risk of a second laparotomy by the conservative treatment of the right tube and ovary, and in view of the obvious Neisser infection.

The subsequent history of this patient is as follows:

She menstruated on March 18, 1904, and on Dec. 15 of the same year she gave birth to a full-term child, without any complication from the suspension of the uterus. Last June, eighteen months later, another child was born; and at the present time, although somewhat debilitated by lactation, the patient is entirely free from pelvic symptoms.

In this case conservative treatment of diseased appendages was successful; in some cases it is not. But is it not better occasionally to perform secondary laparotomies than to deprive young women of all hope of maternity, when even small portions of ovarian tissue may be left *in situ*, and when a tube, although not entirely healthy, may yet perform its function?

CANCER OF COLON.

BY FRANKLIN W. WHITE, M.D.

Male, aged thirty-six, good family history; operated upon for piles two years ago. For last eight months indigestion, occasional vomiting or regurgitation immediately after meals; epigastric distress occasionally relieved by food. In last month pain in right navel region; bowels loose of late. Best weight, 204; loss of 43 lb. in last few months.

Test of gastric secretion and motility show normal motility and secretion normal (free HCl, 43; total acid, 60) or increased (free HCl, 60; total acid, 98). The usual treatment for hyperacidity had relieved the symptoms somewhat.

I saw patient first on March 13, 1906; examination showed a large, vigorous man, slightly pale. A deep rounded solid mass, size of an apple, was found just above and to right of navel, slightly tender and movable, not felt bimanually in flank; liver, edge easily felt, not continuous with tumor. One examination of feces for blood on meat-free diet was negative. Diagnosis of probable cancer of bowel was made and patient referred to Dr. F. B. Lund, of Boston, for operation. At operation a cauliflower cancer was found encircling the ascending colon five inches above the cecum, with few secondary glands in the mesentery. The bowel and glands were resected and a side-to-side anastomosis made. Recovery was uneventful.

Patient had gained 40 lb. in the nine months since operation, has worked hard and steadily, had practically no digestive symptoms. He considers himself well.

The interesting features of this case are the brilliant immediate results of operation and the association of abdominal cancer with gastric hyperacidity. The unusual position of the tumor of the lower part of the ascending colon is explained by the adherence of the omentum to it, which dragged it upward and toward the median line. The single negative guaiac test of the feces for blood shows the need for repeated examinations in suspected cancer of the bowel. Curiously enough, positive results of the blood test are decidedly less constant and frequent in cancer of the bowel than in cancer of the stomach. Cases reported by Boas and Ewald confirm this observation, but no one has explained it.

GASTRIC ULCER.

BY FRANKLIN W. WHITE, M.D.

Male, aged forty-six. For two years he had had distress or pain two or three hours after meals; occasional vomiting; gradual loss of weight. In last three weeks there was much epigastric pain; frequent vomiting of small amounts of "coffee ground" material. Patient was pale, emaciated, very weak; had recent rapid loss of weight, 25 lb. in all. Hemoglobin, 65%; reds, 3,000,000. At first visit vomited a pint of typical "coffee ground" material, containing abundant free HCl.

Gastric contents after test meal, 150 cc., free HCl, 63; total acidity, 90; guaiac positive. Epigastrium diffusely tender; no tumor; 500–800 cc. of brownish fluid containing free HCl and digested blood were vomited on two occasions before breakfast.

The man's whole appearance, anemic, cachectic; the "coffee ground" vomiting, the gases and excess of fluid in the fasting stomach suggested cancer, and this diagnosis was made by two experienced physicians. The abundant reaction of HCl favored ulcer, or the early stage of a cancer developing upon an ulcer base (we know that this is the only form of cancer in which hyperacidity is likely to persist). This second diagnosis seemed to best explain the symptoms, the early distress, pain and vomiting at the height of digestion (ulcer), and the late, rapid loss of weight and strength, anemia and "coffee ground" vomit (secondary cancer). The treatment was rest in bed; exclusive rectal feeding first week; liquids and soft solids by mouth next four weeks; no meat extracts were given. The feces were examined frequently for blood by the guaiac test, with the following results:

Nov. 20, positive,	Dec. 8, negative,
Nov. 26, positive,	Dec. 12, negative,
Nov. 28, positive,	Dec. 13, positive,
Nov. 29, positive,	Dec. 15, negative,
Nov. 30, negative,	Dec. 17, negative,
Dec. 1, positive,	Dec. 19, negative,
Dec. 3, positive,	Dec. 23, negative and negative thereafter.

The intermittent appearance of the blood in the feces was very strong evidence in favor of ulcer and against cancer. The diagnosis of simple ulcer was finally made and justified by the consequent history.

The patient gained 20 lb. in the next few months; has worked steadily during the past year and felt perfectly well, except for brief attacks of hyperacidity, which are promptly relieved by appropriate diet, olive oil and alkalies.

The especially interesting features in this case were the valuable aids in diagnosis, given by the

guaiac test of the feces for blood and the good immediate (one year) result of medical treatment.

The presence of a large amount of fluid in the fasting stomach was not due to organic pyloric stenosis, but evidently to hypersecretion, or possibly to stasis of fluid from pyloric spasm.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-second Annual Meeting, Held at Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

The President, Dr. Clement Cleveland, New York, in the Chair.

METASTATIC CARCINOMA OF THE TUBE AND OVARY IN CANCER OF THE CERVIX UTERI.

Dr. Fred J. Taussig, of St. Louis, Mo., read a paper on this subject, in which he concluded that mild chronic inflammatory conditions of the tube and ovary were frequently met with in cancer of the cervix. Whether this was merely a coincidence or not, he would be unwilling to say. On the other hand, cancerous metastases in these organs were extremely rare in cervical cancer. In fact, he could find no record of such metastasis in an operable case. In carcinoma of the body, however, they were not infrequently seen in tube or ovary, or both. Hence it would seem logical to advise the removal of both tubes and ovaries in every case of cancer of the body. If, however, the patient was still five or ten years from the time of the menopause, and the site of the cancer be in the cervix, the saving of one ovary would be attended with practically no risk to the patient and might relieve her of the disagreeable symptoms of the premature menopause. Since this could be done without interfering with the complete removal of the lymphatics directly tributary to the cervix he believed it logical to leave one ovary, or a portion of one ovary, in every operation for cervical cancer in a woman under forty years of age.

DISCUSSION.

Dr. J. Wesley Bovee, of Washington, D. C., said metastases in cancer of the uterus were by no means common, and that as the disease spread metastases occurred. This emphasized the fact that in the cases brought to the attention of the gynecologist he was helpless in the treatment of cancer of the uterus; that in the cases in which the conditions would ordinarily offer great hope of success we would find that metastases occurred in those structures which we would not remove, the result being that cancer recurred or continued unsuspected. At best, the treatment of cancer of the uterus was not hopeful, notwithstanding the claims of radiographers and the demonstrators of radium, etc., and those who did the most radical surgical operations. He was not prepared, in the present light of surgery of cancer of the uterus, to accept the suggestion of the essayist, that it was safe to leave a portion of an ovary or even one ovary in extirpating cancer of the uterus. His own conviction was that the operation should be as radical as it could be consistent with saving the life of the patient.

Dr. Lapthorn Smith, of Montreal, reported a case of cancer of the cervix in which operation was done early by another surgeon, with every possibility of a complete recovery of the patient and freedom from recurrence; yet this woman came to him a year later, with no sign of recurrence in the vagina, but with two distinct masses in the ovaries which could be readily felt. He considered it too late to do anything in an operative way. This case made such an impression on him that ever since, when doing vaginal hysterectomy, he always removed the tubes and ovaries. He did not think it was safe to leave an ovary or a piece of an ovary, when there was such a tremendous risk of recurrence.

Dr. Reuben Peterson, of Ann Arbor, Mich., desired to place himself on record as voicing the sentiment of Dr. Bovée against the leaving of one ovary, or part of an ovary, in the operation for cancer of the uterus. This was a step backwards, and was not in accordance with progress that had been made in the last ten years in the treatment of cancer of the uterus. He was not convinced that the leaving in of one ovary after the removal of the uterus helped the patient, so far as the menopausal changes were concerned. He had been unable to see much, if any, difference where an ovary had been left in and where it had been removed, after the removal of the uterus for cancer.

Dr. Walter M. Chipman, of Montreal, doubted whether it was a wise thing to leave even one ovary, or even a part of one, after the removal of the uterus for cancer, no matter where the cancer was situated. While it was true that the ovary was not in the direct path of the lymphatic distribution of the pelvis, yet so great and so rich was the anastomosis that he thought the leaving of ovaries must always be a risky procedure.

Dr. Taussig, in closing the discussion, said he anticipated that most men would hardly agree with him as to the advisability of leaving a portion of an ovary in the class of cases under discussion; but he believed, however, from the statistics that the procedure was not at all unsafe, and it seemed to him that it was just as logical to advise the removal of the appendix as to advice the removal of the other ovary. The appendix was a useless organ; the ovary — at least in the opinion of some — helped to make the menopausal disturbances less severe in women under forty years of age, if left.

A NEW METHOD OF VERSION.

Dr. A. F. A. King, of Washington, D. C., spoke of the correction of transverse presentations by the hitherto unrecognized factor of thigh-pressure upon the abdomen, induced either (1) by posture, or (2) by manipulating the lower limbs. The former, he said, was Nature's method of preventing and correcting cross-presentations; and in primitive races was daily exercised by the squatting posture during defecation, etc. Squatting was not a symmetrical proceeding; the two thighs did not press equally. One foot was flat upon the ground and in advance; the other, in the rear, rested only on its toes. The thigh of the front foot would press high up upon the breech end of the fetus; the thigh of the rear foot would press low down upon the head forcing it from the iliac fossa into the pelvic brim, as was illustrated by diagrams.

THE SUPERIORITY OF PRIMARY OVER SECONDARY CESAREAN SECTION; FEASIBILITY AND ADVANTAGES OF A PREDETERMINATION OF THE METHOD OF DELIVERY.

Dr. Edward Reynolds, of Boston, spoke of primary operations being determined upon in advance of labor and performed at an elected date, or with the advent of the first pains. Secondary operations may be performed as soon as a test in labor had shown that the natural powers were likely to fail and before serious exhaustion set in. Late operations were considered in

the light of a last resort. Late sections were already discredited; while secondary sections were still the most frequent class. He gave the statistics of primary, secondary and late sections of the last ten years. Primary section was a very safe operation; while secondary section was only moderately safe. Late section was attended with a high mortality. In general, the mortality was roughly proportionate to the amount of labor endured before operation. Decision before labor was a matter of great moment. The doubtful cases were constantly narrowing and should be done away with. Accurate prediction of expected difficulty required: estimation of the shape and relation of the pelvis (measurements alone were entirely unreliable); of the probable muscular character of labor; of the size and ossification of the head. Methods of estimation of the maternal obstacles required knowledge of the maternal powers (these could be foretold with considerable accuracy); and of the mechanical character of the head. He emphasized the value and importance of obtaining a previous history in multiparæ.

He submitted the following classification: (*a*) undoubted Cesarean section cases; (*b*) cases clearly capable of delivery without the Cesarean; (*c*) doubtful cases.

As to the treatment, in Class A he would resort to primary section; in Class B, labor and the intrapelvic operations. In Class C, a final examination under ether at the date of election, the method finally decided on, and decision adhered to. The predetermination of methods was work for experts only. Lastly, he pointed out that a more friendly relation between the specialist and the general practitioner was desirable.

PUBIOTOMY.

DR. HENRY D. FRY, of Washington, D. C., read a paper on this subject. Pubiotomy was a satisfactory operation, so far as the operation itself went, for enlarging the pelvic girdle in moderate degrees of pelvic contraction. It was easy to perform and could be employed in simple flat pelves with a conjugata vera of 7 or 7½ cm. Separation of the severed bone for 4 or 5 cm. was usually sufficient to enable easy extraction with forceps.

The principal objection to the operation was the difficulty encountered in the after-treatment. These difficulties were little, if any, less than those which brought symphysiotomy into disrepute. The pelvis must be immobilized and the patient kept in the dorsal position several weeks. Maternity institutions could overcome the objection to a large degree by the use of a special bed, as the hammock suspension bed described by Ayres. Williams used the Bradford frame after two of his operations. Jewett employed an ordinary hospital stretcher "the poles of which were lashed to the top rails of an iron bedstead. A trap-door was provided for the dejecta." Montgomery recommends a pelvic sling suspended from the ceiling and attached to a compound pulley. Ordinarily, after pubiotomy and symphysiotomy, the evacuations of the bladder and bowels were attended with discomfort, and it was a hard task for the nurse to keep the parts clean, which was the more important after secondary operations where the patient was already septic and the soft parts contused and lacerated. In consequence, therefore, of the unsatisfactory convalescence after pubiotomy, the operation would obtain in this country a limited field of usefulness as an elective operation. Cesarean section offered a substitute free from this objection and its indications would be extended to embrace these cases of minor degrees of pelvic contraction. With a head movable above the inlet, and one which will not descend by suprapubic pressure, that operation should be performed primarily. When the head was moulded and engaged, forceps might be tried tentatively before resorting to section.

The indications for pubiotomy may be stated as follows: A living child and some contra-indication to Cesarean section. The usual conditions presented were: a moderate degree of pelvic contraction, which had been unrecognized generally, ineffectual efforts employed to deliver with high forceps, the woman exhausted, and infection probably started. If the child be dead, craniotomy; if alive, pubiotomy, in spite of the objections raised against it. It was better to have a live woman at the end of a tedious convalescence than a dead one after a "successful" operation.

INDUCED LABOR AND DELIVERY BY ABDOMINAL SECTION.

DR. EDWARD P. DAVIS, of Philadelphia, said that among obstetric operations there was none which in selected cases gave better results than the induction of labor. This was especially true in disproportion between mother and child whether caused by pelvic contraction, excessive fetal size, or prolonged pregnancy. Private patients were especially benefited by this operation, as they usually came early under the care of the obstetrician and gave him a better opportunity to study their cases than did hospital patients. Private patients who had passed through a disastrous first confinement were often safely delivered in subsequent labor by the induction of labor. Experience, however, and the study of statistics showed that induction of labor was not without serious disadvantages; it was a process uncertain in duration, often exposing the patient to considerable loss of rest and to prolonged suffering. Labor was rarely terminated without some active interference, and this was most often to be accomplished through a cervix poorly prepared for dilatation. Some of the methods employed to terminate induced labor produced unfavorable presentations and positions of the fetus, increasing the risks to mother and child. While it is possible, considering the interests of the mother first, to have a low mortality and morbidity rate for her, the best results so far published gave a very considerable mortality and morbidity for the infant. He believed that the induction of labor compared in gravity, when the interests of both mother and child were considered, with other major obstetric operations.

The author then cited six cases to illustrate the statements he had made.

He strongly urged the importance of conducting cases of induced labor in such a manner that the patient shall be in favorable condition for a major operation, if necessary. He did not believe it justifiable during induced labor to make efforts at delivery by forceps or version unless the conditions were such as to make it reasonably certain that these operations will be immediately successful. If engagement of the head did not develop during induced labor the use of the forceps was a dangerous procedure. If the operator was sure of the size and contour of the pelvis, and reasonably certain of the comparative size of the fetus, version, where the head did not engage, was the safer operation. The writer would not resort to delivery by section in a case where efforts at delivery by forceps or by version had been made. He believed that with careful antiseptic technique it was possible to introduce bougies within the uterus, or even to employ dilating bags without infecting the patient. These procedures should not cause lacerations and should not essentially wound the epithelia of the genital tract. It was impossible, however, to make tentative traction with forceps, or to practise the manipulations necessary in attempting

version without producing lesions in the genital tract through which infection might enter. It was his practice then to decline celihysterotomy in all cases where forceps or version had been tried.

In severely septic cases, the child being dead and unsuccessful efforts having been made at delivery, he believed that the Porro operation would give the best results. In cases where forceps or version had been tried without success, if the child was living, he believed that the consultant should again try whichever of these procedures he thought best, utilizing Walcher's position if advisable; failing in these craniotomy should be done.

As to pubiotomy, a sufficient number of cases had been published to show that the operation, like all other surgical procedures, was not without its dangers and disadvantages. A maternal mortality of from 5 to 7% and a fetal mortality of 17% indicated its severity.

As to delivery by abdominal section, all things considered, and especially when the fetal mortality was taken into consideration, the claims of abdominal section for safe delivery of mother and child could not be disregarded. He did not believe that at the present time a dogmatic opinion could be formed concerning any one method of delivery. Another factor of importance was the value placed by parents upon the life of the child.

DISCUSSION.

The papers of Drs. Reynolds, Fry and Davis were discussed together.

Dr. Egbert H. Grandin, of New York, said the conclusions and line of argument advanced by Dr. Reynolds were in accord with those which he presented in a thesis read before the society seventeen years ago entitled, "A Plea for the Elective Cesarean Section." He contended then that this operation was ideal and although seventeen years had elapsed since, he had not seen fit to change his position.

As to pubiotomy, he would advise it in preference to symphysiotomy, although he had not done the former operation, but had performed symphysiotomy twice, with living mothers and living children, and, so far as he knew, with no disability on part of the women.

Dr. Lapthorn Smith, of Montreal, condemned pubiotomy. Last summer he performed two Cesarean sections, and could testify to the surprising ease with which the operation was done in both cases.

Dr. James Clifton Edgar, of New York, was uncertain as to where to draw the line between Class A, and Class B, in the cases discussed by Dr. Reynolds, that is, the antepartum cases, and the early intrapartum cases. It occurred to him that if Class B or the early intrapartum class, was moved a little forward, and the women not allowed to stay in labor quite so long, instead of a mortality of 3% as reported by Dr. Reynolds, it would approach 1% in the antepartum cases. Where Cesarean section was undertaken in the latter part of pregnancy there was difficulty in securing good drainage.

Pubiotomy did not appeal to him, although he had never done it. He had, however, done six symphysiotomies.

Dr. Robert A. Murray, of New York, thought that eventually, in the vast majority of cases, obstetricians would gradually come to the point where they would let women go to labor prepared to do a Cesarean section, and not interfere with high forceps, or version, or any other method that would produce traumatism of the cervix and possibly cause infection which would defeat the result to be gained from a clean Cesarean section.

Dr. Robert L. Dickinson, of Brooklyn, N. Y., said the only Cesarean section case he lost was a young woman who suffered from toxemia throughout her pregnancy. She was operated on at the beginning of labor pains, but gradually died from a lack of resistance after an easy Cesarean section. For many years obstetricians had had control of the second stage of labor, and with Cesarean section, forceps and version the obstetrician could do what he chose. But the obstetrician had stood helpless before the difficult dilatations and before badly developed cervical conditions. He thought it was unobstetrical to insert a bougie into the uterus as it might loosen the placenta and carry infection. We could not be sure of absolute cleanliness.

The papers were further discussed by Drs. E. W. Cushing, of Boston; George Gellhorn, of St. Louis, Mo.; Seth C. Gordon, of Portland, Me.; Malcolm McLean, of New York; Willis E. Ford, of Utica, N. Y.; Philander A. Harris, of Paterson, N. J., and the discussion closed by the essayists.

OVARIAN PREGNANCY.

Dr. J. Clarence Webster, of Chicago, presented a specimen of ovarian pregnancy. The case was almost identical with the one he reported three years ago, though more interesting, in that the embryo was in position in this specimen. One could see the amniotic cavity with the embryo in position. The thickness of the ovarian tissue averaged about half an inch, except the placental area, where it was thicker. There were several hemorrhages in the ovarian tissue, especially in the position of the placenta.

UNIQUE SPECIMEN.

Dr. Webster presented another specimen which he obtained two years ago while on a vacation in New Brunswick from Drs. White and Ferguson. The patient from whom the specimen was removed was a man, thirty-three years of age, who was admitted to the hospital with symptoms of acute peritonitis. He had had for many years an irreducible scrotal hernia, and it was supposed there was strangulation. The man had been kicked by a horse. An incision was made in the left inguinal region; no hernia was found, but a structure which looked like an adult uterus, tubes and ovaries. The uterus was removed, and what appeared to be a cervix. It was adherent around the inguinal ring; the abdomen was rapidly opened, the patient being practically moribund by that time. The incision was closed, and nothing more was done. Patient died. The specimen was given to Dr. Webster, and he had carefully worked it up. On first presentation it seemed like the adult female genitalia, but careful dissection and microscopical study disclosed uterus and tubes, and what appeared to be ovaries were testicles, but which occupied exactly the same position as the ovaries in the female. The mucosa resembled that found in the adult female. Microscopical examination showed the glands were complex. He emphasized particularly the adult uterus. The tubes had the characteristics of those of an adult female, except the fimbriæ were not so complex. There were fewer fimbriæ; but the relationship to the testicle was exactly the same. On one side there was more marked ovarian or testicular fimbria. On examination of the broad ligaments he found on one side there was a cyst. Both round ligaments were present, but on the side on which the cyst existed the round ligament was flattened out and thin. On careful dissection of the broad ligaments there was a marked tube, about 4 mm. in diameter, slightly convoluted, extending from the upper inner portion of the broad ligament towards the cervix. It was quite firm and had the consistence of a pipe-stem. He pointed out the Wolffian duct, and the vas deferens, also the cervix and prostate. The patient was the father of twin children.

DISCUSSION.

Dr. E. W. Cushing, of Boston, narrated the case of a man, operated on for hernia, in which a uterus was found in the hernia.

Dr. Thomas S. Cullen, of Baltimore, said that some years ago in Baltimore there was found at autopsy in a child a complete set of both female and male pelvic organs.

THE CARE OF THE WOUND AND THE AFTER-TREATMENT OF LAPAROTOMIES.

There was a symposium on this subject.

THE METHOD OF CLOSING THE WOUND.

Dr. Seth C. Gordon, of Portland, Me., read a paper on this subject. He spoke of the time required for perfect union of abdominal wounds, and also pointed out the necessity for using such sutures as can be retained at least two weeks without absorption. He emphasized the use of suture material which is not absorbable and which can be removed at the end of two weeks, as well as the use of suture material that was least liable to infection.

(To be continued.)

Book Reviews.

Diet in Health and Disease. By Julius Friedenwald, M.D., and John Ruhrah, M.D. Second edition, thoroughly revised and enlarged. Philadelphia and London. 1906.

The first edition of this book appeared in 1905 and was reviewed in these columns.

While there are no radical changes in this second edition numerous minor revisions and additions remove some of the previous criticisms.

In the chapter on Chemistry and Physiology of Digestion reference has been made to Professor Chittenden's Experiment on Physiological Economy in Nutrition.

Additions have been made in the chapter devoted to Recipes.

A new list of diets arranged under the headings of the more common diseases has been inserted at the end of the book.

The concise manner in which the entire subject of Foods and Diet is treated recommends it as a book for ready reference.

Abdominal Operations. By B. G. A. Moynihan, M.S. (London), F.R.C.S. Leeds. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1906.

The first edition of Moynihan's book was exhausted in a few months and this second edition needs no apology. Certainly the book is one which should be familiar to every surgeon. It is the work of a master; a skilled technician, personally and abundantly familiar with the problems of which he treats, and he writes in a fashion which compels attention. He is interesting, pointed and practical, but not diffuse. Generously and almost unnecessarily he gives credit where credit is due. Perhaps one misses the abundance of quoted cases and the general philosophizing, which so often have made readable, and added charm to, elaborate surgical treatises, but Moynihan's purpose is directly and immediately to tell his story and to teach his lessons. In this he succeeds admirably.

As the author says, he concerns himself exclusively with the surgery of organs common to the two sexes and embraced entirely by the peritoneum. He omits, therefore, all consideration of genito-urinary and gynecological surgery. The book is divided into five sections and is fairly well illustrated. One regrets the absence of an index to the illustrations. Section I comprises 9 chapters and deals with such general considerations as bacteriology, methods of operating, complications and sequels, peritonitis, abscess and visceral ptosis. It would be futile here, as elsewhere in this short review, to criticize in detail Moynihan's dealing with these subjects. He appeals to every progressive surgeon. One notes, however, that in dealing with the treatment of diffuse peritonitis he fails to describe J. B. Murphy's important and useful "seeping" method. To this reviewer he seems to lay too little stress also on the value of pelvic fixation and abdominal support in the treatment of visceral ptosis. Sections II and IV, made up of 19 chapters, comprise elaborate dissertations on those surgical operations for which Moynihan is most famous in this country,—operations on the stomach, liver and bile passages. Those of us who have read his previous books, compiled in association with Mayo-Robson, will recognize the familiar note of his former writings. Probably no other book to-day sums up so completely the surgical treatment of gastric and hepatic disease as this latest work of Moynihan. Section III, including 13 chapters, treats of operations upon the intestines, and in this field the author finds scope for expressions of conviction, which many American readers will learn for the first time. He gives us in Chapter XX a full and elaborate résumé of Monk's well-known views on intestinal localization, reproducing that writer's admirable illustrations; he devotes Chapter XXI to the subject of sutures, and then in subsequent chapters goes on with an excellent summary of the more important operations upon the intestines, — enterostomy, colostomy, anastomosis, resections, operations for rupture and obstruction, for embolism and fecal fistula. Chapter XXX contains a readable discourse on the treatment of appendicitis, while the following two chapters deal with typhoid perforation and intestinal occlusion. Section V, comprising 8 chapters, treats of diseases of the pancreas and spleen. The opinions there expressed and the conclusions drawn are in no wise remarkable, but the summary of knowledge given is highly satisfactory.

Although the reviewer of Moynihan's book finds in it no startling assertions or striking novel propositions, he is constantly impressed with the personal note struck by the writer. There is no flavor of scholiast or pedagogue. Moynihan writes as a practical surgeon addressing himself to practical surgeons, with the result that he has produced a book altogether acceptable in the reading, instructive of present accomplishments and suggestive of future brilliant possibilities in the great field of abdominal surgery.

The Practical Medicine Series. Under the general editorial charge of GUSTAVUS P. HEAD, M.D. Volume ix, Anatomy, Physiology, Pathology, Dictionary. Edited by W. A. EVANS, M.D., ADOLPH GEHRMANN, M. D., and WILLIAM HEELY M.D. Series 1906. Chicago: The Year Book Publishers. 1906.

This is a good work for practitioners who wish to keep in touch with recent advances in physiology and pathology. Nearly all the articles abstracted deal with subjects of interest and importance to clinicians. The reviews are well written and the salient points clearly presented. Only seven pages are devoted to anatomy. The section on physiology occupies 25 pages, nearly 200 pages deal with pathological and bacteriological topics. At the end of the volume is a list of new medical words with definitions.

Surgical Diseases of the Chest. BY CARL BECK, M.D., Professor of Surgery in the New York Post-Graduate Medical School and Hospital. Visiting Surgeon to the St. Mark's Hospital and the German Poliklinik, etc. With 16 colored and 162 other illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

Beck's fairly comprehensive monograph, profusely illustrated and well presented by his publishers, is valued at $5 a copy. We fancy this fact will limit its sale. After a laborious search of the literature and what appears to have been an honest, painstaking study of his topic, the author has produced a manuscript which would doubtless have made an admirable showing in a System of Surgery or small book, but the elaborate and ambitious presentation by the publishers may deceive the unwary into believing that they are purchasing an exhaustive volume. It is obvious, however, that the author has done his work frankly and conscientiously. He points out in his preface that surgery of the chest is a much neglected field compared with the surgery of other cavities of the body, and proposes modestly to make good the lack.

The book contains six chapters, on the anatomy of the thoracic wall and the diaphragm; on the surgery of the thoracic wall; on intrathoracic diseases; on the value of the Röntgen method in thoracic surgery; on subphrenic abscess, and on diseases of the breast. There is an admirable bibliography and a partial index.

We have read through this book with some care and have gleaned from it a good deal of suggestive information, particularly on tumors of the thoracic wall and on the surgery of the heart and lungs; but we find no striking new contributions to the very interesting subject with which the author deals. A detailed criticism of the book seems needless, though one cannot but regret a somewhat faulty perspective in the general arrangement and frequent obscurity in phrasing.

We commend the book to the general surgeon, for it certainly sums up, in convenient form, our present knowledge of a difficult and little understood subject.

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HEMORRHAGIC INFARCT OF THE INTESTINE.

HEMORRHAGIC infarct of the intestine is a lesion which is produced by the obliteration of a mesenteric artery or vein. An infarct of venous origin is usually due to a thrombophlebitis of the mesaraic veins. The blood stagnates in the intestinal portion of the vein, and produces a congestion with the progressively increasing tension, due to the continual afflux of arterial blood. The origin is varied.

These venous thromboses may be secondary, and represent the result of the extension of an adhesive pylephlebitis primarily seated in the veins of the mesentery. When the lesion is primary it appears in the intestinal veins following a general infection, or even from a purely intestinal infection. An infarct thus produced rarely becomes localized to the large intestine by thrombosis of the inferior mesenteric vein. Usually, however, the small intestine is the seat of the lesion, the thrombosis involving one or several branches of the superior mesenteric vein. One will find a sanguineous infiltration involving a segment of the mesentery, varying from one half to one meter in length, with a very intense congestion of the capillary vessels and thrombosis of the veins. The loop of intestine becomes necrosed and contains hemorrhagic products. A sero-sanguineous ascites arises in all cases, although small in amount; the quantity of fluid never exceeds 1,000 cc.

The clinical evolution of intestinal infarct presents much similarity with that of intestinal obstruction. The patient is suddenly seized, in the midst of flourishing health, with violent abdominal pain and vomiting, which, in the first place, is merely alimentary, but which is not long in becoming bilious. The pains rapidly become

diffused, extending towards the kidneys and lumbar region, and their acuity remains just as severe up to the time of death. From the very onset a very abundant diarrhea makes its appearance; the stools are liquid and yellowish in color and are constantly voided. This diarrhea is of short duration, and in less than twenty-four hours all movements cease and the clinical picture changes to that of intestinal occlusion accompanied with fecaloid vomiting. In other cases the diarrhea persists and takes on a bloody aspect; this enterorrhagia is a most important and almost pathognomonic sign when it appears, accompanied by the abdominal pain and vomiting.

Upon examination in the early progress of the affection, one may find a tympanitic area localized over the coil of gut involved, but later on by palpation a soft, elongated, rounded tumor may be felt, movable under the exploring hand and easily palpable, this representing the diseased gut. At the time that the symptoms of occlusion appear, the abdomen becomes generally distended, and there is slight dullness in the iliac regions, due to the hemorrhagic ascites.

In other words there are two distinct periods in this affection; in the beginning there is pain and diarrhea and later on occlusion. Death is the final outcome when the patient is not radically treated and occurs either in coma or collapse.

The diagnosis is easy, for it is sufficient to recall hemorrhagic infarct with its evolution divided into two stages, which are practically characteristic, and when once the diagnosis is made, treatment should be undertaken at once. This is, laparotomy with resection of the diseased intestinal coil, followed by end-to-end anastomosis. The two cut ends of the gut may also be stitched into the wound, thus creating an artificial anus. At the present time, the affection being most infrequent, few cases have been recorded, but by early operation two complete cures up to this time have been obtained.

REPORT OF THE IMPERIAL CANCER RESEARCH FUND.

The fourth and fifth annual reports of the Imperial Cancer Research Fund, which is under the direction of the Royal College of Physicians of London and the Royal College of Surgeons of England, are in our hands. The earlier reports gave a detailed description of contemplated investigations and were taken up essentially with methods of organization and of prospective work. In the third report certain definite results were given, but the general result of the three years' investigation has led to a certain alteration in the plan of work, which is shown in these last reports. Although perhaps not so apparent, an increasing amount of work is being done, concentrated particularly on the nature of cancer and on attempts to control the disease artificially. The staff of workers in the laboratory has been increased, and many papers have been published representing the discovery of a considerable number of new facts. The time, however, is thought not yet to be ripe for the publication of a scientific report, which would be the third from this laboratory.

The general results of the past year, largely obtained through animal experimentation, controlled by comparative biological and statistic investigations, have thrown light on the nature of the local and constitutional conditions associated with the origin of cancer, and it has also been possible to form more definite conceptions of the nature of the change responsible for the rapid multiplication of cancer cells. Some interesting statistical facts have been secured regarding the relative frequency of cancer in different parts of the body, occurring in particular geographical regions. Recognizing the fact that cancer may occur in all vertebrate animals, it has been concluded that the search for a common external agency is futile, but that the search for a common intracellular change will presumably lead to more definite results. There is no evidence justifying the communicability of the disease from person to person, and it therefore follows that individual and family liability should receive increased attention. Death from cancer is a menace of much importance and, possibly, though this is not definitely established, of increasing significance. A recent statistical estimate in England shows that after passing the age of thirty-five the chance that a man will die of cancer is one in twelve and a woman one in eight. Such statistics are always of interest, though much remains to be done on this side of the question before the real significance of these figures may be properly estimated.

The experimental investigations have concerned themselves largely with inoculation of cancer and with minute study of the development of the cancer cell and the conditions under which this is possible. One conclusion of significance is that no satisfactory evidence of the existence of substances in the serum of affected animals exists which is directly harmful to the cancer cell. Alleged cures of cancer have been investigated

with the not unexpected result that no curative value has been found in any of them. The much advertised trypsin cure has proved wholly inefficacious on careful experimentation and has been found incapable of curing mice of inoculated cancer or of influencing the progressive growth of tumors. The complete surgical removal of the new growth remains the only effective method of cure.

SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS.

The sixth International Dermatological Congress, which is to be held at the New York Academy of Medicine from Sept. 9 to 14, under the presidency of Dr. J. C. White, of Boston, bids fair to be the most important meeting on cutaneous diseases which this country has seen. It is a sign of progress that papers may be presented in five languages, either English, French, German, Spanish or Italian, and may be discussed in the language most familiar to the speaker. If we fail in the attainment of a universal language, which on the whole seems probable, it will not be many years before men of intellect will be able to understand and possibly to discuss papers delivered in the leading foreign languages. Such a meeting as this of the Dermatological Congress is likely to do much toward bringing about such a result.

The program contains many subjects of vital interest to medical science and to medical practice. The field of dermatology has been rather unexpectedly broadened during the last few years; in the first place through the revelations of bacteriology, and in the second, through the increasing knowledge of parasitic diseases. We notice among other papers of special interest one by Dr. W. R. Brinckerhoff, on the "Reaction of the Rat to Inoculation with Leprous Tissue." Although it is not to be supposed that Dr. Brinckerhoff's researches have yet gone very deeply into the etiology of leprosy, owing to the short time he has been engaged in this work, the preliminary results of his investigations will be awaited with interest. It is announced that Dr. E. E. Tyzzer, of Boston, will speak on the Pathology of the Brown-Tail Moth Dermatitis and Dr. H. P. Towle on Hysterical Skin Gangrene, a subject which has long excited an active and at times heated discussion. The opsonic methods as applied to skin diseases are to be discussed by Arthur Whitfield, of London, and the general topic of syphilis, presented by Professor Neisser, of Breslau, will undoubtedly be of much interest. In general the meeting promises to be a most notable one, and we may expect that at least a temporary ultimatum will be given on many subjects related to cutaneous medicine.

DEATHS BY LIGHTNING.

That the somewhat widespread fear of thunderstorms is in a measure justified is shown by recent data collected by the Weather Bureau. According to this report, it is stated that about 800 people are killed in the United States each year by lightning, or approximately one to each 100,000 of the population. The regions which are most dangerous in this respect constitute a statistical study not without interest. It appears that the greater part of Florida, the lower edge of Georgia and a corner of Alabama experience the greatest number of thunderstorms yearly, about forty-five. Slightly further north the number of storms decreases, although they are frequent throughout the Southern States and also in the more southern of the Central States. From the Virginia capes to Connecticut an average of twenty-five thunderstorms occur yearly. Boston has twenty each year. From the New England States toward the west the frequency of storms decreases until on the Pacific Slope there are practically none. The regions of greatest danger, however, do not correspond with the frequency of storms. Southern Vermont, Massachusetts, Rhode Island, Connecticut, New York and a number of states west and south give a record of five deaths to each 10,000 square miles. The statistics furthermore show that four times as many persons of outdoor pursuit as of indoor occupations are struck. Of those struck one in every three persons survives, and this proportion might be greater if immediate treatment were at hand. Finally, more than half the persons killed by lightning are those who have taken refuge under trees. The foregoing figures certainly show that lightning as a cause of death is not negligible, and also that during violent thunderstorms ordinary precautions against being struck are justifiable and should not be regarded as an excess of timidity.

MEDICAL NOTES.

A Hospital for Automobile Victims. — It is stated that the family of the late Thomas E. Stillman, of New York, has given to the town of Lisieux, France, an addition to its hospital where accidents, especially those resulting from automobiles, are to be treated. The gift is made in

memory of Mr. Stillman who died in the hospital a year ago from injuries sustained in an automobile accident. The addition to the hospital has been formally accepted by the mayor, and the names of the donors will be inscribed on the tablet reserved for benefactors of the city.

A National Sanitation Board for Cuba. — It is reported that a National Department of Sanitation is to become effective in Cuba, the *personnel* of the department consisting of one chief and a board of five members holding office for four years. This board will have complete control of sanitary matters in Cuba, and it is expected through its means to prevent future outbreaks of yellow fever, as well as to regulate other matters of public health.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Aug. 28, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 34, scarlatina 26, typhoid fever 24, measles 12, tuberculosis 42, smallpox 1, leprosy 1.

The death-rate of the reported deaths for the week ending Aug. 28, 1907, was 19.60.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 24, 1907, was 243, against 227 the corresponding week of last year, showing an increase of 16 deaths and making the death-rate for the week 20.79. Of this number 135 were males and 108 were females; 241 were white and 2 colored; 166 were born in the United States, 75 in foreign countries and 2 unknown; 47 were of American parentage, 168 of foreign parentage and 28 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 35 cases and 1 death; scarlatina, 23 cases and 0 deaths; typhoid fever, 19 cases and 2 deaths; measles, 14 cases and 1 death; tuberculosis, 57 cases and 28 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 16, whooping cough 2, heart disease 16, bronchitis 3 and marasmus 11. There were 19 deaths from violent causes. The number of children who died under one year was 81; the number under five years, 100. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 97.

There were 2 cases and 2 deaths reported from cerebrospinal meningitis during the week.

A Case of Leprosy. — It is stated that a man forty-five years of age, a resident of Lynn, Mass., is suffering from leprosy and that he will be taken to the Leper Colony on Penikese Island. The patient is a Russian by birth and has been in this country several years. Although he has been under observation for some time, the disease has only recently been diagnosticated as leprosy.

Public Health in Massachusetts. — In the course of a recent speech at Provincetown, Mass., President Roosevelt paid the following tribute to Massachusetts:

"I also hope that there will be legislation increasing the power of the National Government to deal with certain matters concerning the health of our people everywhere; the Federal authorities, for instance, should join with all the state authorities in warring against the dreadful scourge of tuberculosis. Your own state government, here in Massachusetts, deserves high praise for the action it has taken in these public health matters during the last few years; and in this as in some other matters, I hope to see the National Government stand abreast of the foremost state governments."

NEW YORK.

Arrest for Neglect of Medical Aid. — Peter Paterson of Tottenville, Bourough of Richmond, has been arrested and committed to jail in default of $2,000 bail, on a charge of criminal negligence in not accepting medical aid for his infant daughter, fifteen months old, who died on Aug. 19 from whooping-cough and summer diarrhea. Both the parents of the child belonged to a sect known as the Christian Alliance, which like the Eddyite cult, rejects medical attendance, and at the coroner's inquest on the case it developed that when they found it was seriously ill they sent for a regular physician, simply that a death certificate might be obtained in case it should not survive. His prescriptions were never filled and prayer alone was relied on for relief of the illness.

Death of Dr. Miles Henry Nash. — Dr. Miles Henry Nash, of New York, died recently at Ridgefield Park, N. J. He was born in Norfolk, Va., in 1833, and was graduated from Jefferson Medical College, Philadelphia, in 1855. He began practice with his father in Tallahassee, Fla., and later served throughout the Civil War as a surgeon in the Confederate Army. For a considerate time he was in charge of the Llewellen Hospital. At the close of the war he practised for a short period in Georgia and then removed to New York, where for eight years he was assistant to Dr. J. Marion Syms, the eminent gynecolo-

gist. For twenty-six years he was connected with the Demilt Dispensary, first as an attending physician, and from 1888 as house physician. A few months ago, when his health began to fail, he was made physician emeritus. His faithfulness and kindly disposition endeared him to the large medical staff of this great institution and to thousands of patients.

Epidemic of Typhoid Fever at Trenton Insane Hospital. — The State Sewage Commission of New Jersey has just made a report on the epidemic of typhoid fever at the hospital for the insane at Trenton which states that their investigation showed that the outbreak was due to a leak in the city's sewers, which seeped into a spring used for drinking purpose. A report made at the same time by the medical committee of the hospital managers states that since April 8, 1907, there have been 103 cases of typhoid in the institution, as follows: Number of cases in April, 4; in May, 11; in June, 15; in July, 62; Aug. 1 to Aug. 15, 11. Of these patients 18 were individuals employed about the hospital grounds, and the remaining 85, patients and attendants. There have been 18 deaths from the disease, 2 of which occurred in patients treated outside the institution. On Aug. 15 there were 41 patients still under treatment. On only 4 of these was the temperature over 99°, most of the remaining ones being in advanced convalescence.

Bequests. — Frederick F. Ayer, of New York, has presented, through Dr. Moses G. Parker, the sum of $100,000 to the Ayer Home for Young Women and Children at Lowell, Mass., for the purpose of enlarging the work of the institution.

Among the charitable bequests in the will of the late Cortlandt Parker, of Newark, for many years the leading member of the bar in New Jersey, is $3,000 to St. Barnabas' Hospital in Newark.

Obituary.

CHARLES FOLLEN FOLSOM, M.D.

Dr. Charles F. Folsom, of Boston, died in New York at the Roosevelt Hospital, Tuesday, Aug. 20, 1907. He was born in Haverhill, Mass., April 3, 1842; his father was a clergyman, Nathaniel Smith Folsom, D.D. Dr. Folsom was graduated from Harvard College in 1862, and took, in addition to his bachelor's degree, the further degree of Master of Arts. He later entered the Harvard Medical School, receiving his degree in medicine in 1870. The long interval between his graduation in the academic department and the medical school is accounted for by the fact that he passed some time in South Carolina as a representative of the Freedman's Bureau. During his stay in the South he contracted malarial fever which necessitated a long sea voyage and still further delayed the prosecution of his professional studies. As a part of his preliminary medical training, he served as a medical house officer at the Boston City Hospital, and at once thereafter entered upon the practice of his profession in Boston.

From that time forward Dr. Folsom held many places of trust and responsibility and steadily advanced to a high professional standing. One of his interests, which he maintained to the end of his life, was the somewhat neglected study of mental disease. In pursuance of this interest, he served for a time at the McLean Asylum, connected with the Massachusetts General Hospital. He was also a lecturer on mental diseases at the Harvard Medical School, from 1879 to 1882, and from 1882 to 1885 an assistant professor in the same subject. Previous to this he had also lectured on matters connected with hygiene, and in the years 1877 and 1878 had the title of lecturer in that subject. His interest in hygiene began soon after his entrance upon the practice of medicine. In 1874 he succeeded Dr. George Derby as secretary of the Massachusetts State Board of Health and maintained his connection with the board for eight years. He was also a member of the first Metropolitan Sewerage Commission, and was one of the commissioners appointed by the National Board of Health to inspect Memphis, Tenn., after the serious outbreak of yellow fever there. He subsequently succeeded Dr. H. I. Bowditch as a member of that short-lived board. In 1879 he was made secretary of the Massachusetts Board of Lunacy and Charity, a position which he held for two years. He was for many years on the Staff of the Boston City Hospital as a visiting physician, but resigned long before his usefulness to the institution began to wane. He was appointed by Governor Wolcott a member of the commission to inspect State Charity Institutions, of which Prof. Davis R. Dewey was also a member and of which Mr. W. F. Wharton was chairman. Dr. Folsom served as an overseer of Harvard University from 1891 to 1903, inclusive, and during this long term of service proved a most useful member of the board. More recently he held the position of president of the Harvard Medical School Alumni Association; in fact, this was one of the last honors to be conferred upon him. Dr. Folsom's society affiliations were large. He was a fellow of the American Academy of Arts and Sciences, honorary member of the Association of American Physicians, a member of the American Medical Association, a fellow of The Massachusetts Medical Society, a member of the Boston Society for Medical Improvement, the Boston Society of Medical Sciences, the Boston Society of Psychiatry and Neurology, a member of the Boston Statistical Society, of the National Geographical Society, and a trustee of the Danvers Asylum during its early years. He was also connected

as physician at one time with the Massachusetts Infant Asylum and with the Carney Hospital. He wrote on many subjects connected with hygiene, public health, mental disease and general medicine, both in reports and journals.

The mere mention of the positions which Dr. Folsom held, the duties of which were always most conscientiously and serviceably discharged, indicated exact industry, rare attainment and unusual versatility. He achieved high standing and wide reputation in hygiene, in state medicine, in psychiatry and neurology, and since 1881 took a foremost place as a practitioner and consultant in internal medicine. He was a very competent diagnostician and a resourceful therapeutist with confidence in the action of drugs. His patience and kindness to the sick and the sorrowful who sought his care and counsel were beyond all praise. As a writer he was clear, concise, convincing. He was for many years a valued coadjutor on this JOURNAL. Dr. Folsom went to Europe with his wife early last June and returned unexpectedly, suffering from a malignant endocarditis, from the effects of which he died. He will be greatly missed by many people. The state, the community and his profession are all the poorer for his death and that at an age when continued service might still have been expected from him.

Current Literature.

MEDICAL RECORD.
AUGUST 3, 1907.

1. *BETTMANN, H. W. *The Evolution of Gastro-enterology.*
2. LUYS, G. *The Separation of the Urine of the Two Kidneys.*
3. GLASGOW, M. *Primary Dysmenorrhea.*
4. PARKER, F. J. *The Eye Symptoms of Sporadic Trichinosis with Report of Cases.*
5. WILCOX, A. S. *Venereal Prophylaxis — a Problem in Social Hygiene.*
6. HALL, J. N. *The Need of Earlier Diagnosis.*
7. KELSEY, C. B. *Two Unusual Cases of Rectal Hemorrhage.*

1. Bettmann finds that new impetus has been given to researches as to the physiology of the digestive system. As to gastric peristalsis, emotions inhibit it and handling the intestines does the same. Operations close the pylorus for six hours. The impulse for the closure of the pylorus is due to the reaction of acid chyme. We have recent additions to the knowledge of the movements of the intestine. There is an oscillatory movement that breaks up the food masses, but does not propel it forward. By antiperistalsis the bowel contents are churned about in the cecum until most of the liquid is removed. The small intestine is inhibited by vagus stimulation, and excited by the splanchnics. True peristaltic waves are caused by stimulation of Auerbach's plexus. Knowledge of the chemistry of digestion has been much increased. Pepsin is secreted before food enters the stomach, and pancreatic juice when the chyme enters the duodenum. The excitor of pancreatic secretion is secretin, produced by the duodenal mucosa when stimulated by HCl. The upper small intestine secretes, while the lower absorbs. Gastric digestion is relatively unimportant. The study of the feces gives valuable information. Mucus means inflammation, if visible in the colon. Purulent mucus means ulceration. Connective tissue remains in the stool means impaired gastric digestion. Intestinal disorders are hepatogenic, pancreatogenic, or essential intestinal. Too good a digestion, leaving little residue, may cause constipation. The intestinal bacteria offer a new field for investigation. As old age approaches intestinal putrefaction is easier. There are the indolic type, the saccharobutyric and the combined types. Cholecystitis is practically always due to infection.

NEW YORK MEDICAL JOURNAL.
AUGUST 3, 1907.

1. *PEABODY, G. L. *A Case of Carcinomatous Metastases in Unusual Sites.*
2. *JACOBY, G. W. *Intradural Resection of the Posterior Roots of a Number of Spinal Nerves for the Relief of Intractable Pain.*
3. BRAV, H. A. *Aetiology and Treatment of Pruritus Ani.*
4. *VEDDER, E. B. *The Leukocytes in Dengue.*
5. WOLF, H. F. *The Present Status of the Methods of Physical Therapeutics.*
6. MINOR, J. L. *Examination of the Eyes of the Pupils in the Public Schools of Memphis.*
7. WIGHT, J. S. *Post-operative Treatment of Malignant Disease of the Buccal Cavity.*

1. Peabody's case is unusual in that the metastases from a cancer of the breast seemed to show a predilection for the central nervous system, occurring especially in the meninges, the spinal cord and the peripheral nerves.

2. Jacoby advocates a more general use of the intradural resection of posterior spinal nerve roots for the relief of intractable pain. This operation has commonly been regarded as one in which the danger is out of proportion to the results to be hoped for. This opinion, however, is based only upon three cases, in one of which a moderate Brown-Séquard paralysis occurred from clot formation, and in two of which death followed the operation, probably not from the operation alone. Jacoby believes that the danger of this operation is not greater than that involved in simple laminectomy. He cites 15 cases (one original). In only 13 of these is the late result given. In 8 of the 13 the relief proved permanent and complete; in the remaining 5 there was amelioration of the pain, but only incomplete relief. In the cases of incomplete relief it is believed that the number of nerve roots resected was insufficient.

4. Vedder reports the results of studies of the blood in dengue made during an epidemic at an army post in the Philippines. He finds, as other authors have done, that the red count is not notably changed but that leukopenia is constant throughout the disease. By differential counts it is shown that the polymorphonuclear leukocytes are early greatly diminished, and that a corresponding increase occurs in the small lymphocytes. There is a more moderate increase in the large lymphocytes, and a slight one in the eosinophiles. These features of the differential count are suggested as points of some value in distinguishing dengue from malaria and from yellow fever.

[F. W. P.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
AUGUST 3, 1907.

1. SNYDER, J. R. *The Status of the Child.*
2. *GOTTHEIL, W. S. *Ten Years' Experience in the Treatment of Syphilis by the Intramuscular Injection of Insoluble Mercurials.*
3. *WHITEHOUSE, H. H. *Liquid Air in Dermatology; its Indications and Limitations.*
4. BULL, C. S. *The Value of TR as a Diagnostic and Therapeutic Agent in the Recognition and Treatment of Tuberculosis of the Eye; with Report of Cases.*
5. FRANK, M. *A Parabolic Reflector for the Illumination of Test Types.*
6. PEPPER, W., and NISBET, V. *A Case of Fatal Hemolysis Following Direct Transfusion of Blood by Arteriovenous Anastomosis.*
7. SMITHIES, F. *Hemiplegia as a Complication in Typhoid Fever, with Report of a Case.*
8. *SCHMIEDEN, V. *The Treatment of Pseudarthrosis and Retarded Callus Formation by Injection of Blood.*
9. INGALS, E. F., and FRIEDBERG, S. A. *The Treatment of Hypertrophic and Intumescent Rhinitis with the Galvanocautery.*

10. *Kyle, D. B. *Chemistry of Saliva in Relation to Hay Fever.*
11. *Harris, H. F. *Slow Fever.*
12. Edgar, J. C. *Gonococcus Infection as a Cause of Blindness, Vulvovaginitis and Arthritis.*
13. *Adler, H. M. *A New Indicator for the Mineral Acids.*

2. Gottheil's article is an enthusiastic description of the advantages which he maintains are to be gained by the use of intramuscular injections of insoluble salts of mercury, chiefly the salicylate, in the treatment of syphilis. The results are held to be much more rapid and more efficacious, both in the cure of the disease and in the prevention of relapses. As a matter of convenience to the patient the method is further said to be preferable to that of medication by mouth or by inunctions, since the weekly or bi-weekly injections, if properly given, are almost painless and without danger. One precaution, however, is to be observed, — the needle, disconnected from the syringe, should be watched for a few seconds after it is inserted to make sure that it has not entered a vein, an occurrence met in perhaps one out of 25 injections. Toxic effects have been rare. In the discussion following this paper the general feeling seemed to be adverse to the injection of insoluble mercurials on the ground that the absorption was uncertain and could not be controlled.

3. Whitehouse believes that we have in liquid air a dermatologic remedy of real worth, at least in a limited field. He gives its physical properties and the facts so far as known as to its bactericidal value, which seems to be practically *nil*. We must look, therefore, to changes induced by it in cellular metabolism for its therapeutic effects, and he states that it relieves pain in pathologic conditions, lessens discharge and odor and tendency to hemorrhage. Mild applications favor healthy granulation, while stronger ones destroy exuberant growth. It has little reactionary effect on scar tissue, and, therefore, he believes that it has a diagnostic value on epithelioma. The conditions in which he finds it of value are pigmentary, hairy and vascular nevi, angiomata, lymphangioma circumscriptum, lupus erythematosus, lupus vulgaris and epitheliomata (unaccompanied by lymph-gland invasion). It should be applied on a swab, which can be adapted to any form desired, and the elements governing the effects produced are: (1) the degree of saturation of the swab; (2) the accuracy of contact; (3) the amount of pressure exerted, and (4) the duration of the exposure. As a rule, the slower the method the better the result. Special directions are given as to the treatment of the various conditions and a number of cases are reported. He thinks that in a certain class of epitheliomata it is a distinct power for good.

8. Schmieden calls attention to Bier's method of treating pseudarthrosis and retarded callus formation by injections of human venous blood between the separated fragments of bone. It is based on the theory that the formation of callus in fracture is due to the inflammatory reaction caused by the hemorrhage attending the fracture, and this inflammatory reaction failing, we can re-excite it by making, so to speak, an artificial hemorrhage. In Bier's clinic, the technic is as follows: The site of the "false joint" as well as the arm from which the blood is taken are rendered aseptic. By the use of a light constricting band the veins are made prominent and then one of the largest vessels is punctured or incised and 30 or 40 cc. of blood are drawn into the syringe. The syringe must be large and its needle sufficiently strong in order that the blood can be readily forced through it. It must be strong also because much force is needed to inject into the hard scar tissue. The blood must be forced, not only between the fractured ends, but also around them in places where, from periosteal and paraosteal tissue, callus may be formed. It is important also that the blood be injected immediately after its removal, using the same syringe into which it has been drawn to prevent coagulation in the syringe. Blood containing its fibrin gives better results than defibrinated blood. From 20 to 40 cc., according to the size of the bones, is injected, the operation being repeated every ten days. In most cases there is a visible reaction and after its subsidence a tumor remains that becomes callus. Sometimes one or two injections suffice, in other cases five or six may be needed. The more recent the fracture the greater the success, hence the best results are obtained in cases of retarded callus formation. In some old cases of pseudarthrosis the method fails, but the same is true of all other methods. In a large number of injections made in this way he has never seen any harmful effects. He has often injected blood taken from another healthy subject and has found it more effective. The facts support the conclusion that the extravasation of blood is the natural irritant which excites callus formation. The technic is simple, and the method is recommended with the hope that the results obtained in Bier's clinic will be substantiated by the experience of others.

10. Kyle believes that hay-fever can be traced, in a large proportion of cases, to abnormalities in the nasal secretion and the saliva. He has done much work in the investigation of the saliva and mentions a number of conditions which he regards as of clinical importance. The reaction may be excessively acid or excessively alkaline. There may be an excess of ammonia compounds or of sulphocyanides. In treatment of hay-fever he maintains that we should be guided by the results of such examinations. By means of the internal use of the citrate, lactate or benzoate of soda, the dilute mineral acids, the salicylates or sodium chloride, he has been able to relieve 60% of his cases without local treatment.

11. Harris discusses the so-called slow fever which occurs during the summer months in southern Georgia. It has been variously regarded as a form of malaria, as a form of typhoid, and as a distinct disease in itself. The clinical symptoms are not described at length, but the essential feature is the continued fever with absence of the usual positive evidences of typhoid. The author has studied 45 cases of the disease. In 24 of these the spleen was enlarged. Blood smears made in all cases failed to show the presence of malarial organisms. Blood cultures from 12 cases yielded typhoid bacilli in 6 cases and paratyphoid in one. Agglutination tests were positive in but 12 of the 45. Two cases were fatal but no autopsies could be obtained. In the discussion which followed the reading of this paper it was generally agreed that the disease must be a mild atypical form of typhoid.

13. Adler calls attention to the indicator discovered by Dr. R. L. Emerson, of Boston, called "carminogen." Solutions of this reagent in contrast to those of Günzburg's reagent, are permanent. Test papers, made by saturating filter paper with such solutions, are also permanent if kept from the air. As an indication for the free mineral acids carminogen is fully as delicate as Günzburg's reagent.

[F. W. P.]

Annals of Surgery.

July, 1907.

1. *Halsted, D. S. *The Results of Radical Operations for the Cure of Carcinoma of the Breast.*
2. *Greenough, R. B., Simmons, C. C., and Barney, J. D. *End Results of 376 Primary Operations for Carcinoma of the Breast at the Massachusetts General Hospital.*
3. *Ochsner, A. J. *Final Results in 164 Cases of Carcinoma of the Breast Operated upon during the Last Fourteen Years at the Augustana Hospital.*
4. *Jacobson, N. *End Results Following Operation for Carcinoma of the Breast.*
5. *Oliver, J. C. *The End Results Following Operations for Carcinoma of the Breast.*
6. *Cabot, A. T. *Carcinoma of the Breast. A Study of the Pathological Conditions and Their Relation to the Question of Recurrence.*
7. *Pilcher, L. S. *End Results Following Operations for Carcinoma of the Breast.*
8. Ransohoff, J. *Very Late Recurrences after Operation for Carcinoma of the Breast.*
9. Wharton, H. R. *Carcinoma of the Bones Following Carcinoma of the Breast.*
10. *Gwyer, F. *Thymus Gland Treatment of Cancer.*
11. *Syms, P. *Peritoneal Tuberculosis.*
12. Goodman, C. *Acute Diffuse Gonnorrheal Peritonitis.*
13. Stimson L. A. *Some Practical Deductions from Personal Experience in the Treatment of Appendicitis.*
14. De Forest, H. P. *Motor-Boat Fractures.*

1–7. Halsted reports 32.3% of cures of cancer of the breast based on a total of 232 cases The immediate operative mortality was 1.7%. The statistics of the Massachusetts General Hospital have been already abstracted. (See BOST. MED. AND SURG. JOUR., Aug. 15, p. 237.) Of 98 cases traced, Ochsner reports 34 which have lived beyond the three-year period following operation for breast cancer. Of 71 cases traced by Jacobson which were operated more than three years ago, 35 are still living; 33 died of metastases, and 3 within a year after operation of other diseases. Cabot has operated on 42 private cases of breast cancer up to 1904. Nine are free from recurrence (21.4%); 5, though living, have recurrence.

10. Gwyer reports marked benefit in the treatment of inoperable carcinoma by extract of the calf's thymus gland. It has been found to produce the following results: (1) diminution or elimination of pain; (2) diminution of the size of the growth; (3) "Its use is followed by better digestion, by more regular action of the bowels, and improvement of the general condition, as evidenced by a clearer skin and eyes, greater energy and a general sense of health and well being." Gwyer still advises operation in all operable cases, and also in so-called inoperable cases for the removal of as much diseased tissue as possible, so there will be a minimum to be absorbed and eliminated.

11. Syms, from a review of the literature on peritoneal tuberculosis during the past ten years, emphasizes the following points: (1) operations should not be undertaken during the first year of infancy; (2) surgery offers but little hope in the adhesive variety of the disease; (3) the serous variety offers the best prognosis under the various forms of treatment, and the surgical treatment of this variety offers the best results obtainable in this disease; (4) the operation should have as its foundation the removal of the original focus of the disease, as tubercular Fallopian tubes, appendix or mesenteric glands; (5) laparotomy should not be performed when the peritoneal trouble is only one phase of a more or less general tuberculosis. [W. C. Q.]

THE LANCET.

JULY 27, 1907.

1. SIMPSON, W. J. R. *The Croonian Lectures on Plague. No. IV.*
2. HEWITT, F. W. *General Surgical Anesthesia Lecture. No. II.*
3. *BUCHANAN, R. M. *The Carriage of Infection by Flies.*
4. *ROSS, R., SALVIN-MOORE, J. E., and WALKER, C. E. *A New Microscopical Diagnostic Method and Some Simple Methods for Staining Liquid Blood.*
5. *RUNDLE, C., MOTTRAM, J. C., WILLIAMS, R. S., ORR, J., and WILLIAMS A. E. *A Case of Cerebro-Spinal Meningitis; Isolation of the Specific Organism; Preparation of a Vaccine; Recovery.*
6. PAVY, F. W. *A Study of the Conditions producing the Anomalous Reaction not Infrequently met with in Testing Urine for Sugar with Fehling's Solution.*
7. WILLIAMSON, T. D. *A Case of Cerebro-Spinal Meningitis during Pregnancy.*
8. *NIERENSTEIN, A. *The Treatment of Trypanosomiasis.*
9. EDE, F. C. *Cerebral Hyperemia as a Factor in the Therapeutic Action of Lumbar Puncture (Illustrated by a Case of Tetany).*

3. Buchanan presents experiments on the carriage of infection by flies in swine fever, staphylococcal abscess, pulmonary tuberculosis and anthrax. He shows that flies alighting on any substance containing pathogenic organisms are capable of carrying these organisms in large numbers on their feet, and depositing them on surface after surface with which they come in contact.

4. Ross and Salvin-Moore describe certain granular elements in normal red blood corpuscles supposed to be nuclear remains. These can be found with appropriate staining methods in normal blood and in one case of malarial anemia they were present up to 11%. Three methods of staining liquid blood are described.

5. Rundle and others give the details of a case of cerebrospinal meningitis successfully treated with a vaccine made from an organism isolated from the patient's blood. They are confident of good results in other cases.

8. Nierenstein discusses the treatment of trypanosomiasis by arsenic compounds, by dye-stuffs (malachite green, fuchsin, etc.) and by atoxyl. He gives the preference to atoxyl, to be followed by mercury and fuchsin. [J. B. H.]

BRITISH MEDICAL JOURNAL.

JULY 27, 1907.

1. ROBERTSON, W. *Remarks on an Outbreak of Epidemic Cerebrospinal Meningitis.*
2. *BALLANTYNE, A. J. *Remarks on Ocular Symptoms in Cerebrospinal Meningitis.*
3. DUNN, P. *Infective Cyclitis in Relation to Penetrating Wounds of the Eyeball.*
4. LORIMER, G. *An Address on Medicine in Ancient Greece: the Methods of Hippocrates and Work Accomplished by him.*
5. WILLIAMS, O. T. *Abnormal Fat Assimilation Associated with Some Diseases of the Intestine.*
6. HEWLETT, R. T., and DE KORTÉ, W. E. *On the Etiology and Pathological Histology of Beri-beri.*
7. SYMES, J. O. *Arthritis and Erythema Nodosum.*

2. The most striking feature of the eye symptoms in meningitis is the great variety shown — squint, retraction of the lids, changes in the size and reaction of the pupils, etc. — in the same patient from day to day. Conjunctive hemorrhages, which do not occur at the onset of other acute illnesses, may be useful in diagnosis. The presence of conjunctivitis is also an early symptom, and may help to distinguish this from other forms of meningitis. The absence of ocular symptoms does not justify a favorable prognosis. [J. B. H.]

THE PRACTITIONER.

JULY, 1907.

1. *HALLIBURTON, W. D. *Diabetes Mellitus from the Physiological Standpoint.*
2. *BRADFORD, J. R. *The Pancreas and Diabetes Mellitus.*
3. HALL, I. W. *The Basis of Therapy in Diabetes.*
4. *LABBÉ, M. *Diet in Diabetes.*
5. BRUNTON, L. *On the Heart in Relation to Diabetes.*
6. *KRAUS, F. *The Carlsbad Treatment of Diabetes and Glycosuria.*
7. TAYLOR, J. *On the Nervous Symptoms Associated with Glycosuria.*
8. MORRIS, M. *Skin Disease Associated with Diabetes.*
9. JESSOP, W. H. H. *The Ocular Complications in Diabetes Mellitus.*
10. PERKINS, J. J. *The Pulmonary Complications of Diabetes.*
11. HYSLOP, T. B. *Diabetes and Insanity.*
12. *WALLACE, C. *Diabetic Gangrene.*
13. *FLETCHER, H. M. *On Diabetes in Children.*
14. BEDDARD, A. P. *The Urine in Diabetes.*
15. *BROWN, W. L. *Acetonuria: Its Clinical Significance and Treatment.*
16. SMITH, W. G. *Clinical Notes upon Testing for Sugar in Urine.*
17. SIKES, A. W. *Gouty Glycosuria.*
18. WILLIAMSON, R. T. *On the Action of Certain Drugs in the Treatment of Diabetes Mellitus and Chronic Glycosuria.*
19. PARSONS, A. R. *The Treatment of Diabetes Mellitus by Drugs.*
20. DAWSON, B. *Glycosuria and Life Insurance.*

1. Halliburton summarizes the latest news on the physiology of the liver and the pancreas in relation to glycosuria and diabetes, and discusses in detail the various animal experiments from which these facts have been deduced.

2. Bradford presents cases and discusses the various lesions of the pancreas which do and do not cause diabetes. Experimental results certainly associate glycosuria with the loss of an internal pancreatic secretion, and post-mortem evidence tends to show extensive degeneration of the islets of Langerhans in diabetes.

4. Labbé summarizes the treatment of diabetes by diet, gives his own special methods, and considers those recommended by others.

6. The treatment of diabetes in Carlsbad can be divided

into five parts: (1) internal use of the waters; (2) the diet; (3) baths; (4) the use of all those different therapeutic methods and proceedings called "physiologic therapy"; and (5) pharmaceutical treatment. These Kraus takes up in detail. He urges physicians to send cases for treatment in the early stages when they are yet in a position to benefit by a stay at Carlsbad.

12. Wallace strongly advises amputation of all cases of diabetic gangrene, not only for surgical reasons but because the progress of the disease itself is sometimes checked, and often sugar disappears from the urine, temporarily at least.

13. In children the onset of diabetes is more sudden, the course more rapid and the termination almost invariably fatal. There appears to be greater freedom from associated diseases, especially pulmonary complications. During twenty-two years at St. Bartholomew's Hospital out of 506 diabetics 5.4% were under sixteen years. Heredity seems to be a strong factor in the etiology of this condition. Acute illnesses may be predisposing factors. Skin affections are very common. As regards diet in children a strict carbohydrate-free diet only rarely can be adopted.

15. Acetonuria is the result of increased metabolism of fat. This will occur in any starving tissue, but it is particularly apt to occur if oxidation is deficient. Deprivation or non-utilization of carbohydrate food causes both starvation and deficient oxidation. Acetonuria is often seen in diabetes, recurrent vomiting, pernicious vomiting of pregnancy, in certain gastro-intestinal disorders, and associated with broncho-pneumonia as well as a result of delayed chloroform poisoning. The treatment depends on the cause but consists largely in diminishing the fat, increasing the carbohydrates, and neutralizing the acids already formed by soda bicarbonate.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT, No. 24. JUNE 11, 1907.

1. STADELMANN, E., and WOLFF-EISNER, A. *Septicemia Due to the Typhoid and Colon Bacilli.* (Continued article.)
2. * TIEDEMANN and NAMBER, T. *A Case of Cerebrospinal Syphilis.*
3. *SCHULTZE, W. H. *The Differential Diagnosis of the Different Varieties of the Streptococcus.*
4. SAUERBRUCH. *The Radical Operation of Very Large Inguinal Hernias.*
5. *PFEIFFER, C. *Transplantation of Goiters and Experimental Graves's Disease.*
6. BLUMBERG, M. *A Diagnostic Sign in Appendicitis.*
7. STOHR, H. *Atypical Cell Proliferation and Carcinoma.*
8. HECHT, A. F. *An Explanation of the Appearance of Green Stools in Infancy.*
9. JAHR, R. *An Intra-ureteral Method for the Removal of Impacted Stones from the Ureter.*
10. NEUSTÄTTER, O. *Abnormal Laughter as a Reflex from the Eye.*
11. IPSEN, W. *Silvery Discoloration of the Hair.*
12. KRAFT, E. *The Demonstration of Pentose in the Urine.*

2. The noteworthy features in this case of cerebrospinal lues was the appearance of tabetic symptoms, specially gastric crises and ataxia. The explanation of this was found at autopsy in degeneration of the posterior columns in the cervical and lumbar regions.

3. This article is a discussion of the status of the different varieties of streptococcus, of which the author recognizes with Schottmüller the following four varieties: S. longus, S. erysipel., S. mitior, S. viridans, S. mucosus, and S. lanceolatus (pneumococcus). These may be certainly differentiated by the use of Schottmüller's blood-agar and of litmus-nutrose-agar (Drigalski's medium). In blood-agar the S. longus shows a hemolytic areola, the mucosus gives an abundant slimy growth, while the S. lanceolatus and S. mitior both show green colonies. The latter two are distinguished by the use of Drigalski's medium, which is turned from blue to red by the S. mitior, but is unchanged by S. lanceolatus. The mucosus is not merely a variety of the pneumococcus, but a distinct species, for it retains its cultural characteristics and never changes so as to resemble the pneumococcus. The failures of some authors with these media are ascribed partly to the use of old cultures, partly to improperly prepared media.

5. The transplantation of goiters from man to animals hitherto has met with little success. Pfeiffer, however, has found transplanted bits of thyroid apparently functioning 127 days after operation. His method was to transplant small pieces of thyroid *immediately* on removal from the human subject into the spleen of dogs or goats. One feature of Graves's disease, tachycardia, was constantly present in all cases. It was greater, however, when the goiter of Graves's disease was used for transplantation, than with simple goiters. [W. T.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 22. JUNE 3, 1907.

1. *FRAENKEL, C. *Investigations on the Spirillum of European Relapsing Fever.*
2. *LASSAR, O. *Atoxyl in the Treatment of Syphilis.*
3. DETERMANN. *The Influence of Cold and Heat on the Viscosity of the Blood.* (Continued article.)
4. BING, H. J. *An Apparatus to Measure Blood Pressure.*
5. STILLMARK, H. *A New Sphygmomanometer.*

1. This article deals with the experimental inoculation of mice, rats and apes with specimens of the African and Russian varieties of the spirillum of relapsing fever. Fraenkel found that immunization against the one variety did not protect against inoculation with another variety, and that the serum of immunized animals used in the Pfeiffer experiment or hanging drop destroyed only that variety of spirillum which had been used for inoculation.

2. The destructive action of atoxyl on the trypanosomes of sleeping sickness suggested to Lassar, the well-known Berlin dermatologist, the use of this drug in syphilis. His results were disappointing at first, owing to too small dosage, but when he increased the dose to .5 gm. (7½ gr.) three times a week, he obtained surprising success. The syphilitic lesions, whether chancre or gumma, or secondary eruption, disappeared with great rapidity. He emphasizes the fact that close watching of the patient is necessary, owing to the possible poisonous effects of the drug. The future must decide how permanent the results with atoxyl are, and in what cases its use is indicated. [W. T.]

No. 23. JUNE 10, 1906.

1. *SCHIEK, B. *The Treatment of Scarlet Fever.*
2. HAALAND, M. *Observations on Natural Resistance to Tumor Growth in Mice.*
3. LAVUEUR, A. *Artificial Radium Baths.*
4. *LOHNSTEIN, H. *A Piece of Wax Removed from the Bladder by Solution in Benzine.*
5. POSNER, C. *An Interesting Case of Suprapubic Prostatectomy.*
6. HANSEMANN. *Remarks on Cancer of the Skin.*
7. *DETERMANN. *The Influence of Cold and Heat on the Viscosity of the Blood.* (Concluded.)

1. To avoid the infection of the home on the return of scarlet fever patients from the hospital, Schiek has adopted the following plan, with good results: the patients in the hospital are divided into three classes, those in the early, middle and convalescent periods. These are isolated from one another and a patient passing from one division to another is bathed and receives a change of clothing. By this means the danger that a child may be a carrier of the disease is reduced to a minimum. Uncomplicated cases are discarded at the end of six weeks with the advice that they be sent for two weeks to the house of relatives who have no children. The treatment consists chiefly in rest in bed, and a diet without meat, with cardiac stimulants freely used where indicated. Moser's serum has given excellent results. (This is anti-streptococcus serum made by using streptococci from the heart's blood of scarlatina patients for the injections of horses without intermediate passage through animals.) It must be given in the first few days to be of benefit, and so used, in the dose of 200 cc. subcutaneously, apparently aborts the disease. It does not, however, avert heart and kidney complications.

4. Lohnstein in a case of persistent hemoturia with cystitis, found as the cause a piece of wax in the bladder. With the cystoscope it could be seen floating on the surface of the water in the bladder. A few injections of benzine dissolved this foreign body without unpleasant symptoms.

7. An interesting contribution on the viscosity of the blood is made by Determann. He finds that after cold baths the viscosity is always considerably increased, while warm baths have the opposite effect. The electric light bath, however, increases the viscosity, perhaps owing to the possibility of evaporation of the sweat, which is absent in the warm bath. The blood pressure, red count, hemoglobin and specific gravity usually, but not always, showed parallel change. Artificial venous congestion caused a considerable increase in viscosity, due no doubt to the increased CO_2 content. [W. T.]

The Action of the Blood Serum of Nephritics upon the Frog's Eye, Resembling the Action of Adrenalin. Schur and Wiesel (*Wien. Med. Woch., No.* 23) found that serum obtained from patients suffering from chronic nephritis, even when diluted 20 times, caused marked dilatation of the pupil of the excised frog's eye, while serum from control individuals, healthy or otherwise diseased, never caused similar action. Apparently the mydriatic action of the nephritic serum is due to a functional increase in the "chromaffine tissue" of the suprarenal glands. This tissue is found constantly increased in chronic nephritis, especially with hypertrophy of left ventricle and high blood pressure. [L. G. M.]

Correspondence.

LETTER FROM FRANCE.

[*From our Special Correspondent.*]

Taking One's Own Remedies.

The Pyrenees, Aug. 15, 1907.

Mr. Editor: It is an excellent practice for physicians to taste their own medicines. Old Professor Guyon used to prescribe for his cases of genito-urinary tuberculosis a strong solution (4%) of creasote in cod liver oil. Curiosity led me one day to taste this mixture, and from that time to this I have never ventured to give creasote in that way; it is simply horrible, and would require a stomach of boiler-iron to stand for any length of time.

After I became a physician I formed the habit of tasting the preparations I prescribed, "to see whether it is right"; in reality, to learn what they were like. This custom served a twofold purpose: it familiarized me with all sorts of things of which I should have been cognizant but was profoundly ignorant, and it enabled me at a pinch to be very dogmatic. When recalcitrant patients complained that their medicine was nasty I was able to reply very sharply that such was not the case, "I have taken it myself," — an unanswerable retort.

As regards the first point,— the faculty at which I studied, a very ancient and renowned institution, had so organized its curriculum that the graduate of a five years course, that required an A.B. degree for entrance, was altogether unfamiliar with the appearance of pharmaceutical preparations and had never made a pill, powder or potion in his life, although he had given up an entire year to zoölogy, botany, physics and chemistry. When, then, as a young physician, I first began to prescribe, it was a constant source of interest, and often a surprise to me to behold the aspects of the products of my pen; and I passed through a number of those "regrettable incidents," which I dare say other physicians experienced too in their early days, when things didn't quite materialize as it had been hoped they would. I have a very vivid recollection of one patient bringing me a bottle in which phenacetin crystals were gayly bobbing up and down on the surface, when they ought to have been dissolved!

My aspirations for summer vacations are generally of a lofty nature; but this year I have had to accompany a relative to a spa for a course of treatment. So that I, who for years have been in the habit of distributing people to cures around Europe, have this time been obliged to take up again my former practice of trying my own remedies. However, though not a very exhilarating performance, it has not been without its peculiar interest.

This cure lies in the Pyrenees, the mountain-chain running from the Mediterranean to the Bay of Biscay, and forming the dividing barrier between France and Spain. Our particular spot is in the western portion of this range, where it runs down to the ocean, with Biarritz, the fashionable French watering-place, on the one hand, and San Sebastian, the summer resort of the Spanish royal family, on the other.

And here I desire to open an extra-medical parenthesis. The genial editor is probably away on his summer vacation, and I am counting on the "Sub" being short of copy, to let it go through.

The reason I gave the geographical details above is that philologically this western end of the Pyrenees is one of the most interesting regions in Europe, as it is inhabited by the remnants of a very old and remarkable race, the Basques. When at the dawn of history the Kelts issued from Asia and swept across the central and western portions of the continent they found them already occupied by a people whom the Romans called Iberians, but who speak of themselves as Euskarians. The present Basques, a few hundred thousand only, are the sole survivors of this once mighty race. In a similar way the Slaves and Teutons, who came after the Kelts, found in the north a people whom they pushed before them, and whose only representatives to-day are the Tshudic tribes, Finns, Lapps, etc., that lie along the Arctic coast.

These two peoples, then, are the oldest in Europe. Now when philologists came to look into the question they perceived that whereas the languages of Europe belong to the Indo-European family, that of the Basques and Tshuds cannot be connected with it in any way. These races were in possession of Europe when our forefathers arrived there; but whence they came or to whom they belong, no one has the least idea.

When the Basques woke up to the fact of their uncertain origin and great antiquity, their flesh became proud and their minds imagined a vain thing. Their language was the oldest in Europe and could not be connected with any other. The explanation was self-evident: it could only be that of the Père Éternel in person. And having laid claims to this parentage they stick to it and are to-day convinced that the tongue they speak and which no one can understand is the same as that spoken in Heaven! It is on account of this interesting point that I have thought it allowable to make this digression; since to rub elbows freely with people speaking the language of Heaven, and to see it in print and on the corners of the streets, is not given to ordinary mortals every day.

At San Sebastian I went into a shop to buy a Basque paper. The good woman looked at me dubiously, and remarked, as she handed it over: "*Si el Señor no entiende el Basquense,*" — the paper is not likely to be of much use. And she was about right; for a more hopeless looking lot of print I never saw. Judge for yourself: here is a paragraph taken at random:

"*Gizon onen, aitatu diran lanak, ikaragarrizkuak izandu ziran. Eraso ziyon bakarr bakarrik, Euzkadiren esati indarsubari ta onekin batubak zeuden euzkotarr zitalari. Atari ta etzeko jaun eta jabe izanik, kutizi kemen aulgarriyari begiratu gabe, denari jazarra bildurrgarriyan, ekin ziyon. Nai etzuben izan neurtu ta ez zenbatu oben aunditasuna.*"

Now I have a bowing acquaintance with the principal Latin, Teutonic and Scandinavian (though not Slave) languages; but there is not one syllable in that paragraph that I can make out, — and I may say the same for the rest of the paper. So there you have an illustration of what the Boston *Transcript* will look like when you reach the Elysian Fields; and you can now realize what is in prospect for any one intending to move on and settle in that district. Proper names run on this order: M. Borthagarayenia is a real estate agent in Cambo; Itxasson is a railway station; and Mlle. Ichuribéhère makes garments for the adornment of her sex.

The language is said to be *extremely* difficult to acquire, and to resemble Japanese in certain particulars. The people themselves relate that the Devil came and lived

among them once for seven years to try to learn Basque, but finally had to abandon the attempt. Here, however, there appears to be some misunderstanding. We have authority, the Scriptures, Dante, Milton, for believing that the Devil was once himself an Angel in Heaven, from which he was ejected on account of political troubles. The Euskara was consequently his mother tongue. If then at a later period he found himself entirely ignorant of it, this must be the earliest recorded case of retrograde amnesia.

I was moved to hear the true ring of this venerable speech, so I went to mass. This is the best way to judge what a language sounds like when you are first in a strange land. I once tried it on in Holland, forgetting the reputation of its inhabitants for "slimness," and had to sit out a Reformed Church service of *nearly two hours*, and listen to an endless sermon in two innings on Barabbas. The sacristan had slipped around and locked the doors!

I am happy to say that the fat curé who discoursed to the Basques that day — women below in the body of the church and men in galleries upstairs behind — was more of a Christian than his gloomy confrère in Holland; for his doors were very wide open, and we men strolled in and out and smoked between times. To listen to the language is nothing like as angular at it looks; in fact, its sound is quite pleasant, with no one peculiarity striking you disagreeably, as is often the case with a language you do not understand. I have now written to this curé for a small grammar; it is just as well to get the thing under way, if the language has got to be learned; though I fear that in these uncertain times my chances of coming any nearer things celestial than my brief sojourn among the Basques are not very great.

But to return now to medical matters, from which we have drifted pretty far.

In this Basque region I came across something distinctly out of the ordinary over here, — a really intelligent public railway W. C. Travellers in Europe have noticed the inexpressibly filthy conditions that usually prevail in such places among the Latin peoples, and since we are among medical men I may mention as an instance a W. C. I once saw in a good hotel in Italy, where the white window curtains, which hung down low by the seat, had been used by several persons for purposes where most people employ medicated paper. If I had not seen this myself I am afraid I should never have believed the story.

The Basque arrangement consists in a tile room whose floor slants in one direction, and at the further end of which is a depression pierced with a hole on whose either side is a small pedestal for the feet. There is a flushing apparatus of considerable force, and the entire room can be swept with a hose. Nothing more suitable from the point of view of cleanliness can be imagined, and as regards hygiene the system presents the advantage of the natural squatting posture which, in case you have never thought of this point, is a factor of no little importance in intestinal exoneration. There seems little doubt but that among the reasons for the great prevalence of constipation at the present day is the defective attitude in which the body is placed in the modern luxurious W. C. The squatting attitude of the primitives behind the nearest bush, with the great pressure brought to bear on the intestines by the mass of the thighs, was far preferable. Try the plan on a few constipated patients, and observe for yourselves.

The waters of our spa are pleasantly warm, alkaline and mildly sulphurous, the kind that are habitually spoken of as rotten eggs. This is, however, a gross libel. They are not at all disagreeable, even to drink; and employed in the form of spray, gargle or inhalation their sedative and modifying effect on chronic irritation of the mucous membranes is unmistakable.

This resort is frequented mainly by persons obliged to overtax their voice professionally: preachers, singers, lawyers, etc., but first and foremost among the clientèle is the curé, who is here in shoals, — half the curés of France and Navarre. I never saw so many curés, mostly elderly men worn out in their calling. What can there be in the mass that tears their throats to pieces in this fashion? Some of them have no voice left at all. Old Germain Sée used to be very caustic in speaking of this spa, to which, he observed, the curés went to meet the cocottes, all of them for the purpose of treating their mucous membranes!

But as I looked at these curés a thought occurred to me. To reach the spa they *all* have to pass through Lourdes, only two hours distant, and supposed, I believe, to be the holiest spot of pilgrimage in the Catholic world. The question then that at once crops up in the mind of the ungodly is this: Why do these curés come to be treated here, where they have to stay three weeks, instead of stopping off and being cured instantaneously at Bernadette Sonbirous' grotto? Can it be that, like other "preachers" who could be named, they are not given to taking their own remedies?

Seekers after the humorous should come and see this gargling establishment. The treatment is done in public, in long rows of little stalls, fifty on one side of the hall, and as many on the other. Taking your stand in the center aisle you see the patients all in profile. It is not easy to describe the *coup d'oeil;* but those of you who have farms can get an idea of it by going out and watching the chickens drink: the prolonged dip of the beak in the water followed by the stretch of the neck aloft with the idiotic look of ecstasy in the eye. That is about the picture.

It is surprising to observe the variety of ways in which the human being can gargle in public. There is the self-conscious man. He takes a small sip, gargles the roof of his mouth a moment, sends half of it down over his shirt front, and then looks in horror to the right and left to see if any one observed what he had done. Then there is the short-necked fat Monsieur with the apoplectic face. His efforts are quite alarming; his tint becomes purple, his eyes project from their sockets, and in the early days I used to feel for a lancet and prepare for phlebotomy. It never came off, however. Another manner is the gargle ecclesiastic. This was generally a very dignified affair. Some of the curés found the ordeal very trying, but resigned themselves to it with a humble spirit. You could see from the supplicating glances they cast on high that they were hoping that this mortification, too, would be reckoned to their credit. But the man who really rejoiced my soul was the old habitué, the patient with a previous season or two, who knew the trick. He comes in with an air of proprietorship, calls the girl by her first name, takes his water to his stall, pulls a small towel out of his pocket and ties it around his neck, and then with one hand on the side of his stall he throws himself back to arm's length and gargles with a conviction and uproar that can be heard for rods away. He was a daisy.

The fact is that it is not an easy matter to gargle in public, and that it requires some little practice to detach yourself from your surroundings and become unconcerned. The women seem to succeed better than the men. One little woman in gray that I used to watch was a wonder. She could gargle much longer at a time than any one else, and I came to the conclusion that she must possess in her interior some pneumatic apparatus on the order of the fish's swimming bladder.

One or two other points about this region may prove of interest. It is a land where the poppies are *yellow*. Now fancy that! This seems to upset the appointed order of things. In all well regulated countries with which I am familiar the wheat is sprinkled with poppies scarlet and cornflowers blue; and the puffs of wind as they pass along ruffle the surface of the field slightly and make it look like moiré silk. But what becomes of your landscape if the poppies are yellow!

Again, the peasants here have the loveliest mountain dogs, about the build of the Newfoundland but lighter, with white coats and the pointed head of the bear. Now it is a curious fact that the Pyrenees were once famous for their bears. These dogs are simply delightful, and the best natured beasts in the world in spite of their size. I saw one walk up to where its family baby was sitting on the floor and proceed to carefully lick its face and head indiscriminately with its great red tongue. The baby didn't seem to mind; merely tried to ward off the tongue with its arms.

But I see that I must close, although there are many things to relate about this beautiful Basque region. The present is, as I said, a vacation letter; when I return to Paris I shall have some recent medical developments to report.

"Spectator."

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 17, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1656	821	Quincy	14	8
Chicago	—	—	Waltham	10	4
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	5	1
Baltimore	241	96	Brookline	5	1
Cleveland	—	—	North Adams	—	—
Buffalo	—	—	Chicopee	10	7
Pittsburg	—	—	Northampton	4	0
Cincinnati	—	—	Medford	6	2
Milwaukee	—	—	Beverly	10	5
Washington	—	—	Leominster	4	1
Providence	64	23	Hyde Park	2	—
Boston	220	66	Melrose	0	0
Worcester	62	36	Newburyport	—	—
Fall River	49	64	Woburn	3	2
Cambridge	34	16	Marlboro	1	1
Lowell	50	20	Westfield	7	4
Lynn	26	12	Peabody	—	—
New Bedford	38	26	Revere	11	3
Springfield	29	9	Attleboro	8	3
Lawrence	54	35	Clinton	1	0
Somerville	19	7	Adams	7	6
Holyoke	—	—	Gardner	4	2
Brockton	12	3	Milford	—	—
Malden	13	7	Watertown	5	3
Chelsea	8	4	Plymouth	—	—
Salem	15	9	Weymouth	8	3
Newton	7	1	Framingham	1	1
Haverhill	14	3	Southbridge	4	3
Fitchburg	—	—	Wakefield	—	—
Everett	6	4	Webster	—	—
Taunton	—	—			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED AUGUST 14, 1907.

GEDDINGS, H. D., assistant surgeon-general. Directed to proceed to Ellis Island, N. Y., for special temporary duty, upon completion of which to rejoin his station in Washington, D. C.

COFER, L. E., passed assistant surgeon. Granted leave of absence for 1 month. August 13, 1907.

GRUBBS, S. B., passed assistant surgeon. Granted leave of absence for 1 day, August 11, 1107. August 10, 1907.

FRANCIS, EDWARD, passed assistant surgeon. Directed to proceed to Mobile, Ala., for special temporary duty, upon completion of which to rejoin his station at Mobile Quarantine Station. August 9, 1907.

COLLINS, G. L., assistant surgeon. Granted leave of absence for 1 day, August 16, 1907. August 14, 1907.

OLSEN, E. T., assistant surgeon. Granted leave of absence for 1 month and 28 days from August 18, 1907.

MILLER, W. W., assistant surgeon. Relieved from duty at Ellis Island, N. Y., and directed to report at the Bureau in Washington for temporary assignment in the Hygienic Laboratory, August 9, 1907.

GIBSON, L. P., acting assistant surgeon. Granted leave of absence for 8 days from August 8, 1907.

GUSTETTER, A. L., acting assistant surgeon. Granted leave of absence for 30 days from September 1, 1907. August 6, 1907.

HUNTER, S. B., acting assistant surgeon. Granted leave of absence for 6 days from August 7, 1907. August 10, 1907.

MCGINNIS, R. H., acting assistant surgeon. Granted leave of absence for 30 days from September 1, 1907. August 8, 1907.

NUTE, A. J., acting assistant surgeon. Granted leave of absence for 20 days from August 20, 1907.

RODMAN, J. C., acting assistant surgeon. Granted leave of absence for 3 days from August 8, 1907. August 10, 1907.

SAFFORD, M. V., acting assistant surgeon. Granted leave of absence for 4 days from July 15, 1907, on account of sickness. August 8, 1907.

SAFFORD, M. V., acting assistant surgeon. Granted leave of absence for 4 days, from August 8, 1907, under paragraph 210, Service regulations.

SIMONSON, G. T., acting assistant surgeon. Granted leave of absence for 10 days from August 5, 1907. August 7, 1907.

WALKLEY, W. S., acting assistant surgeon. Granted leave of absence for 6 days from August 18, 1907. August 10, 1907.

GOODMAN, F. S., pharmacist. Granted leave of absence for 30 days from July 5, 1907, on account of sickness. August 8, 1907.

GOODMAN, F. S., pharmacist. Granted leave of absence for 28 days from August 5, 1907. August 6, 1907.

TROXLER, R. F., pharmacist. Granted leave of absence for 11 days from August 19, 1907. August 6, 1907.

ELDREDGE, M. B., pharmacist. Granted leave of absence for 23 days from September 3, 1907.

PROMOTIONS.

ASSISTANT SURGEON A. M. STIMSON commissioned as passed assistant surgeon, to rank as such from July 27, 1907. August 5, 1907.

ASSISTANT SURGEON W. C. RUCKER commissioned as passed assistant surgeon, to rank as such from July 27, 1907. August 5, 1907.

ASSISTANT SURGEON W. K. WARD commissioned as passed assistant surgeon, to rank as such from July 27, 1907. August 5, 1907.

ASSISTANT SURGEON J. W. TRASK commissioned as passed assistant surgeon, to rank as such from August 16, 1907. August 5, 1907.

APPOINTMENTS.

DR. CHARLES W. CHAPIN commissioned as assistant surgeon in the Public Health and Marine-Hospital Service, August 8, 1907.

DR. EDWARD R. MARSHALL commissioned as assistant surgeon in the Public Health and Marine-Hospital Service, August 8, 1907.

DR. RAYMOND B. SCOFIELD commissioned as assistant surgeon in the Public Health and Marine Hospital Service, August 8, 1907.

DR. EMIL KRULISH commissioned as assistant surgeon in the Public Health and Marine-Hospital Service, August 8, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 24, 1907.

JAMES H. HOLLOWAY, passed assistant surgeon. Camp Columbia, Cuba, will proceed to Palmira, Province of Santa Clara, Cuba. for duty, relieving Assistant Surgeon William A. Angwin. (Orders issued by the Commanding General, Army of Cuban Pacification.)

M. W. BAKER, passed assistant surgeon. Detached from the naval hospital, Boston, Mass., and ordered to the naval hospital, New Fort Lyon, Col.

E. C. TAYLOR, passed assistant surgeon. Ordered to the naval hospital, New York, N. Y., for treatment.

SOCIETY NOTICES.

THE THIRTY-FIFTH ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION. — The thirty-fifth annual meeting of this association will be held at Atlantic City, N. J., from Sept. 30 to Oct. 4, 1907.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION. — The thirty-third annual meeting of the Mississippi Valley Medical Association will be held at Columbus, O., Oct. 8, 9, and 10, 1907, under the presidency of Dr. H. Horace Grant, of Louisville, Ky. The orator in Medicine will be Dr. Geo. F. Butler, of Chicago, Ill., and the orator in Surgery Dr. Frank D. Smythe, of Memphis, Tenn.

RECENT DEATHS.

CHARLES FOLLEN FOLSOM, M.D., M.M.S.S., of Boston, died in New York, Aug. 20, 1907, aged sixty-five years.

DR. HORACE G. LESLIE, of Amesbury, Mass., a widely known physician and citizen, died Aug. 23 at the age of sixty-five. He received his medical education at the University of Vermont and went to Amesbury in 1867, where he has since lived. He served during the Civil War as a surgeon. In 1891-2 he was a member of the State Legislature, and in general was known not only as a physician of capacity, but also as a public spirited citizen.

DR. SAMUEL BEYEA, a prominent physician of New Rochelle, Westchester County, N. Y., died on Aug. 18 at the Roosevelt Hospital, New York, after an operation for gallstones. He was in the forty-third year of his age and had practised in New Rochelle for the past fifteen years.

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Address.

SOME GENERAL CONSIDERATIONS REGARDING TUMORS.*

BY W. T. COUNCILMAN, M.D.

When your society honored me by requesting me to give this address I thought it would not be amiss if I should try to give you some of the general views on the subject of tumors which have come to me through their study. In this study the clinical side of the subject has been considered only so far as it has a direct bearing on the pathological side, so I must be pardoned if I touch but lightly the clinical aspect.

The subject of tumors is of perennial interest for the clinician, the pathologist, the embryologist and the medical statistician. The enormous advance in medical knowledge in the past three decades, which has brought to light the essential nature of many of the infectious diseases and thereby given us the indications for their control, which has revolutionized surgery and made it probably the most important branch of medicine, has but lightly affected the subject of tumors. It is true our knowledge of modes of diagnosis and methods of treatment, of structure, of modes of growth, has been increased, and the application of that knowledge to clinical treatment has given brilliant results, but of the essential nature of tumors we know but little more than we did thirty or even sixty years ago.

A tumor is a new formation of tissue which is without function and which has the power of independent and unlimited growth. At some point in the body the cells begin to grow and produce a tissue which may be circumscribed and easily separated from the adjoining parts, or it may be so infiltrated and closely related with the healthy tissue that it cannot be separated as a distinct mass. The growth arises from the cells of the body, and the structure produced agrees more or less closely with the tissues of the normal body. In some cases there is more analogy with the embryonic than with the adult tissues. The tumor may be composed principally or entirely of cells just as are the embryonic tissues, or between the cells there may be a varying amount of intercellular substance. Considered in its widest relations the tumor is atypical, that is, it does not conform to the type of normal structure. In some cases the tumor may agree exactly with a corresponding tissue in the normal body; thus it may be impossible to distinguish by the most careful microscopic examination the tissue of a myoma of the uterus from the normal muscle of that organ, but the departure from the type is shown by the fact that the tumor forms a circumscribed nodular mass of muscle such as does not appear in the normal uterus.

The tumors are independent structures which live in the body as does a parasite, taking their nourishment from it, but the body as a whole has no influence on the tumor. The nutrition of a tumor is independent of the general nutrition of the body. In cases of general malnutrition all the tissues of the body are affected, some, of course, much more than others, but it is not an uncommon thing to find a rapidly growing tumor in an individual in whom the general nutrition is reduced to a very low degree. The cells of a tumor are independent of the laws governing the general nutrition.

A tumor is without function. No matter how closely its structure may agree with that of some normal structure, it never exerts a corresponding function. One of the most striking examples of this is seen in the lipoma which is composed of fatty tissue which both macroscopically and microscopically agrees with the structure of the normal fat. We know that the adipose tissue is a special form of tissue in which fat is deposited, serving as a nutritional storehouse and increased or diminished in the varying nutrition of the body. Notwithstanding that the lipoma agrees in its structure with the normal fat, it in no way serves the nutrition of the body. I have seen a large lipoma in an individual in the last stages of tuberculosis and in whom the normal fat was reduced to the very lowest degree. No matter how strikingly similar the structure of an adenoma may be to that of a normal gland its cells do not produce a corresponding secretion.

The growth of a tumor is independent of the laws governing the growth of normal tissues. We know that in the course of normal development each tissue is produced by a process of differentiation. Tissues which in their full development differ widely both in structure and function are formed from cells of like character. The individual organs and the body as a whole continue to grow until a size is reached which corresponds to the type of the species, when the general growth ceases or is limited to that sufficient to repair loss. The growth of all organs is interdependent; at any time in the period of growth the same relative degree of development and size will be found in the different organs. No organ develops independently of the others; the liver and kidney correspond in size with that of the individual. In certain organs the growth is continuous from the embryonic period to the completion of growth; in others, as in the genital glands, there is a long period of quiescence after the embryonic period, and growth does not actively begin until the onset of puberty. The life of certain tissues is passed quickly. The thymus, certainly an active organ during fetal and for a short post-fetal period, instead of continuing to grow with the rest of the tissues, early undergoes atrophy. All the lymphoid tissues reach their full development early and atrophy instead of continuing to grow with the other organs. Notwithstanding that growth ceases with full development or is limited to the very slight degree necessary to compensate for the wear entailed by function, a considerable energy of growth remains which in various ways can be excited to activity.

Certain tissues and certain organs have a power of regeneration or of reforming tissue which may

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be destroyed to a very much greater degree than others. In general, the younger the individual the greater the power of regeneration of the tissues; a tadpole quickly regenerates the tail when this has been cut off, but the adult frog is incapable of regenerating a limb. The less highly differentiated a tissue the greater the power of regeneration; the slightly differentiated epithelium removed from the surface of the body is quickly replaced, but nerve ganglion cells once destroyed are never renewed again nor can such a complicated structure as a renal glomerulus be renewed. We must assume that there is some means of regulating normal growth. Whether growth is regulated by means of the production of an internal secretion, or whether the regulation is more of a physical nature and due to the mutual relations of pressure is unknown. Certain things show the possibility of the regulation of growth by chemical substances. The thyroid probably has some such influence but the most definite example of the influence of a chemical substance on growth is that of the internal secretion of the corpus luteum. It has been shown that the growth of the mammary gland which accompanies pregnancy may be produced in a non-pregnant animal by the injection of an extract of the corpus luteum. That growth may be stimulated by alteration of the normal relations of the tissues to one another is shown in the repair of injuries. The surest way to excite a tissue of proliferation is by the production of an injury. All repair of wounds is due to this power of growth. Growth thus started by an injury persists until the normal relations of tissue are again established, when it ceases. Growing tissue demands more blood and new blood vessels are formed in it, but hyperemia alone will not excite tissue to grow; the tissue regulates its blood supply.

As compared with the normal tissues the independent growth of a tumor is its most striking characteristic. It is lawless, unregulated, and has no relation whatever to the growth of the body as a whole nor to the growth of the different organs. The fetus developing in the uterus of the mother is no more independent in its growth than is the growth of a tumor. Each may be regarded as an independent parasite deriving only nutrition from the host. A tumor begins to grow by certain cells of the body multiplying rapidly and independently. The cells in their general features conform to the cell type of the species but they show an extraordinary degree of variation. The cells of a tumor derived from squamous epithelium have the general characteristics of this and those derived from cylindrical epithelium have the general characteristics of cylindrical epithelium. As a rule, from the microscopic examination of a tumor, we can tell from what sort of tissue it is derived. Cell growth and multiplication in a tumor take place as in the normal tissues but present many variations. In normal cell division complicated processes take place in the cells which render it possible for the new cells to have parts of all the contents of the old. In the division of tumor cells the process is much more irregular. New cells are formed which have but a part of the contents of the parent cell, and instead of the cell dividing into two equal parts a triple or fourfold division may take place. It still remains a mooted question whether the tumor, once having started, grows only from itself or whether adjoining tissues can take part in the growth and become a part of the tumor. Certainly, in most cases this does not take place but I have occasionally seen in tumors of the breast appearances which seemed to indicate that certain of the ducts and other structures of the gland which had become included in the infiltrating growth of the tumor were taking on the same sort of growth and forming a part of the tumor. In certain tumors derived from the skin epithelium I have seen similar appearances in the hair follicles and glands. It is very difficult in these cases to be certain that the apparently normal cells which seem to be changing into tumor cells are not really tumor cells which have replaced the normal cells.

We distinguish in general two forms of tumor growth. One, termed the expansive growth in which the tumor enlarges as from a single center, remains a coherent mass and pushes away the surrounding tissue. Often the connection with the surrounding tissue is so loose that no trouble is experienced in the enucleation. Such type of growth is seen in those tumors which contain considerable intercellular substance or in which the cells are woven together to form a compact mass. In the infiltrating mode of growth the cells penetrate into the spaces of the surrounding tissue and in their growth force themselves or are carried by the lymph streams even deeper into this tissue. In such a tumor it is impossible to determine the limits of the tumor by the naked eye examination. What appears to be normal tissue may contain numbers of actively growing tumor cells.

Tumors are always connected with the surrounding tissues by blood vessels, and usually by considerable amounts of connective tissue as well. The blood supply varies and depends upon the rapidity of growth of the tissue. Tumors like other tissues make demands upon the blood for their nutrition, and the more active the growth the more abundant is the blood supply. The vessels vary much from the normal and have not the characteristic division into arteries, capillaries and veins. Into a normal organ one or several arteries enter, break up into capillaries and these coalesce to form a system of veins. There is nothing similar in the vascular supply of tumors. From all sides vessels of different caliber and often of capillary structure enter into the tumor, divide and ramify in it without definite arrangement. This is understandable from the development of the tumor which does not take place in a definite arterial territory but only in a small part of one, and the existing vessels are utilized for nutrition and very greatly enlarged. New vessels are continually being formed to keep pace with the rapid growth, but these have

rather the character of the vessels formed in inflammatory tissue and are not differentiated into arteries and veins. Owing to this irregularity of vascular formation the circulation of a tumor is not so perfect as that of a normal part.

In certain tumors, particularly the sarcomas, the vessels for the most part may be mere channels in the tissue lined by a single layer of endothelial cells. The thin walled vessels are easily compressed by the growing masses of cells, and necroses and infarctions, the result of the disturbances of the circulation, are common. In many tumors hemorrhages as a result of rupture of vessels or of necrosis of their walls are seen. Necrosis also occurs as the result of imperfect nutrition, the blood supply not being able to keep pace with the rapid growth of cells. All these degenerations are found chiefly in the center of a tumor, the cells on the outside where they are closer to the blood supply are usually better preserved. In consequence of these degenerations connected with insufficient blood supply the size of a tumor may give an imperfect indication of the rapidity of growth, for the central degenerated tissue may be absorbed and replaced by cicatricial tissue which occupies but a small space. The best example of this is given in contracted scirrhus of the breast, the periphery of which may give all the characteristics of a rapidly growing tumor while the center has become converted into a mass of cicatricial tissue containing but few of the essential tumor cells.

The growth of a tumor may be rapid or slow, continuous or intermittent. A tumor may remain quiescent for months or years and suddenly take on rapid growth without any apparent cause. Rapid growth of a tumor is due to rapid cell formation, and is especially seen in those tumors in which cells and not intercellular substance form the chief constituents. Where a growing tumor comes in contact with the adjoining tissue the latter always suffers. Any tissue, be it the most resistant in the body, gives way before it. In part it may simply be compressed or pushed aside. The cells are destroyed in part by the effect of the pressure upon them, in part by the interference with their nutrition which the increased tissue pressure brings about, the compressed intercellular substance forming a capsule around the tumor, united with it by blood vessels and their accompanying connective tissue. A slowly growing tumor may produce great deformity of the surrounding tissue without destruction.

The slower the growth the greater the deformity which will be produced. Liver cells may be flattened out into long spindles around slow metastatic nodules, and I have seen the spinal cord compressed into a flat ribbon-like mass by the constant pressure exerted by a tumor of the dura. In other cases the tissue gives way without showing evidences of pressure. Cells and tissue may simply disappear when the growing tumor comes in contact with them. Occasionally the tumor cells are phagocytic, and surround and devour the tissue cells; in other cases the tissue cells seem to dissolve by contact with tumor cells. In the normal growth of bone the old bone is constantly removed by the action of large cells termed osteoclasts, which act in the same way as do the giant cells around foreign bodies. Where a rapidly growing cellular tumor comes in contact with bone this may be removed by the tumor cells acting as osteoclasts. The tumor cells are able to make stronger demands on the nutritive material which is present, and in addition their presence and contact has in some unknown way a pernicious influence on the normal tissue. The growth of the mass of a tumor is in the direction of the least resistance. In consequence of this a tumor seated near a surface of the body projects above this and is often connected with the body by a pedicle. The best examples of this are given by the tumors with expansive growth as the myomata of the uterus which may form either submucous or subserous tumors connected with the uterus by a small pedicle.

Around a tumor which grows by infiltration it is not uncommon to find smaller and larger nodules apparently not connected with the main mass. Careful examination will show in many of these cases that the separation is not complete but there is a strand of tumor tissue forming the connection. In other cases the separation is complete. These secondary masses are due to the extension of the growth along tissue spaces which offer little resistance, and when a locality favorable to greater expansion is reached a nodule is produced. Growth and tissue infiltration then proceed in the secondary nodules in the same manner as in the primary.

Under metastases we understand the secondary nodules which appear in different parts of the body and which have no connection with the main and primary tumor. These may appear in the most different organs, either singly or in hundreds or thousands, and may vary in size from a pin's head to several pounds. The metastases may be much more conspicuous and larger than the primary tumor. The metastases really represent a part of the primary tumor, and are due to cells and portions of tissue which have become separated from this and in various ways transported to different parts of the body where, being part and parcel of the primary growth, they grow with all of the characteristics of this. The conditions which they find in new regions may be so favorable that the primary nodule may be far surpassed in size. Single cells may by means of their own ameboid activity crawl along the tissue spaces and lymphatics often in a direction contrary to the course of the lymph stream and become the founders of new growths. Their progression is, however, much more frequently passive; they enter into the blood or lymph streams and they are carried in the direction of current until they reach narrow spaces, such as capillaries and lymph reticulum through which they cannot pass. The most extensive metastasis is by means of the blood vessels. The cells find their way into the blood either by growing into the vessels or from the lymph by means of the thoracic duct. Most

frequently the cells are carried into the capillaries, but larger portions, which may be separated when the primary tumor invades large vessels, not infrequently lodge as emboli in arteries of greater or less size. The metastatic growth may then be associated with the circulatory disturbance resulting from the arterial occlusion. Where the cells lodge and the metastatic nodules form depends upon a number of conditions which are only in part physical. The entry into the blood is most apt to take place in veins, and hence the most frequent metastases in blood infection is in the lungs, the cells finding here the first capillary territory. The width of the capillaries is also of influence, those of the lungs being so wide that cells of considerable size may pass through them. The blood metastases in tumors of the alimentary tract takes place from the cells being carried by the portal veins into the liver, which offers by its numerous capillaries in which the circulation is slow favorable conditions for the lodgement of foreign substances. The most abundant metastases by means of the blood are found in the sarcomas which from the close relation of the tumor tissue to the blood vessels give favorable conditions for the entry of cells into the blood. The metastases will be the more abundant the smaller the tumor cells and the greater their energy of growth. We may find cases of sarcoma in which these conditions are fulfilled in which there are countless numbers of metastases appearing in every organ of the body. In one such case at the autopsy numbers of tumor cells were found in the circulating blood. The comparative freedom of certain organs in the body from blood metastases cannot be explained solely by the varying conditions of the circulation. Metastases are comparatively rare in the ovary, the uterus, and the brain, all organs which from the large blood supply and the abundance of capillaries should be favorable for the lodgement of cells. It must be said, however, that metastases in the liver and lung are easily recognized by their variation in color and consistency, and we should not compare the frequency of metastases in the ovary and testicles with that of the entire liver or lung but with equally large areas of these organs. It must be remembered that not only must the cells effect a lodgement but they must find in the foreign situations favorable conditions for their growth.

Metastases by means of the lymphatics is, on the whole, more common than by the blood. Especially in the carcinomas the cells from the beginning are not only in close relation with the lymphatic system but actually within it. The epithelial cells of a carcinoma penetrating the connective tissue as they do must enter into the tissue spaces and by means of these into the lymph vessels. Even if we accept the prevalent view that the system of lymphatic vessels is a closed system similar to that of the blood vessels the relation of the lymph vessels to the tissue is certainly closer than is that of the blood vessels, and cells from the tissue can more easily enter into them. It is rare, for instance, that we find a carcinoma of the breast in which a careful search will not show metastasis in the axillary lymph nodes, and I have repeatedly found carcinoma cells in the lymph vessels apparently on the way to the nodes. Secondary nodules are also formed by a process termed "implantation." This takes place when the primary tumor extends to a surface and cells or portions of tumor tissue become separated and attach themselves to other parts of the surface. This is especially seen in tumors of the ovary which extend to the peritoneum. In such cases the peritoneal surface may be literally sown with small tumors which have arisen in this way. Similar implantation may take place, though more rarely, in the case of tumors growing on mucous surfaces.

The metastases give us a further example of the marvelous capacity of the tumor cell for growth. When tumor cells are carried to a different part of the body they will grow in their foreign surroundings. In this they are sharply distinguished from the other cells of the body. There have been many experiments made to imitate the metastases of tumors by transferring normal tissue to different parts of the body. Entire organs may certainly be transplanted, and if they form sufficient vascular connections they will grow and function in their new situation. Cells, however, when separated from organic connection with the organs and placed in different situations, may, for a time, show some capacity for growth, but they finally atrophy and disappear. The result is the same whether adult or fetal tissues be chosen for the experiment.

One of the unfortunate conditions met with, particularly in the malignant infiltrating tumors, is a tendency to return in the same place after operation. It is now generally believed that this return of the tumor is due to the incompleteness of removal, and as we have learned more about the mode of growth of tumors and applied that knowledge to surgical operations, return is less often seen than formerly. In an infiltrating tumor, as a carcinoma of the breast, there is no certain means of telling at the operating table how far into the surrounding tissue the tumor extends. Not only must the tumor be removed, but all the lymph vessels which may possibly contain cells of the tumor on the way to the nodes must be removed. The operator must fully appreciate the fact that the cells of the tumor represent really infectious particles, any one of which remaining in the tissue may lead to a return of the tumor. It is self-evident that at the operation the tumor must not be cut into and the cells scattered. The idea is also held that the return of the tumor is not necessarily due to presence of some of the initial tumor cells, but the tissue in which the tumor primarily arose may retain a capacity for tumor development which may lead to the formation of a tumor similar to that removed.

The division of tumors into those which are benign and those which are malignant serves a more or less useful purpose. Strictly speaking no tumor is benign. The situation of a tumor

may be the criterion of its danger to the individual. A simple fibroma, so situated that by its growth organs essential to life may be compressed and their function interfered with, may involve greater danger for the individual than would a rapidly growing carcinoma in a less important situation. The characteristics of a malignant tumor, apart from the situation, are rapidity of growth, a tendency to invade surrounding tissues, to produce metastases and to cause a condition of general malnutrition in the bearer. The benign tumors are circumscribed, their growth is slow and expansive, they can be successfully removed and do not produce metastases. The clinical importance of a tumor can usually be determined on microscopic examination. Rapidity of growth is shown by the number of nuclear figures indicative of cell division which are present. As a rule those tumors which show an excess of cells compared with the intercellular substance have more malignity but there are many exceptions. As a rule, also, the more the structure of a tumor departs from the normal structure, the more atypical it is, the greater the malignity. This is well shown in the carcinoma as compared with the adenoma. Both tumors arise from the epithelium, and this constitutes the essential element in their structure. In the carcinoma the epithelium forms solid masses and strands, the cells having no definite relation to each other and the whole structure of the tumor has no analogy with the normal epithelial structures. The cells have lost all function and even their capacity for orderly form and arrangement, retaining only the characteristic of growth. Between the masses of cells there is connective tissue which does not form an integral part of the tumor and whose chief function is to bear the blood vessels for the nutrition of the epithelial masses. Neither blood vessels nor connective tissue penetrate within the epithelial cell masses. In the adenoma the separation into epithelial cell masses and stroma is as pronounced as in the carcinoma, but the epithelial cells do not grow in an atypical disorderly manner but have the same definite relations to one another which they have in a gland. They retain to a certain degree, at least, the characteristics of their type. Owing to this typical arrangement there is less tendency for the cells to be separated from their connections and invade or be carried into the surrounding tissue. In certain situations, however, as in the alimentary canal, the adenoma may be fully as malignant a tumor as the pure carcinoma. The same departure from the normal type is seen in the sarcoma as compared with the fibroma; although arising from the same tissue as the fibroma it is atypical in being composed of cells with little or no intercellular substance. In the fibroma the cells retain their physiological property of forming intercellular substance.

That condition of general malnutrition termed "cachexia" which is so often found in the bearers of malignant tumors, cannot be explained by any single factor. It is true that the tumor cells make a stronger demand on the nutritive forces than can the normal tissues, but the withdrawal of nutrition alone cannot account for the cachexia. With the rapid cell growth of malignant tumors there is constant degeneration and absorption, and such products of degeneration have a toxic action on the body. There is also in many cases the accompaniment of intense pain due to the pressure of the growing tumor on sensory nerves, producing sleeplessness and anxiety. The greatest degree of cachexia may be observed in cases where, with these conditions, there is interference with the nutrition of the body due to the situation of the tumor, as when constriction of the alimentary canal is produced.

The study of the regeneration of tissues has shown us that like tissue comes from like. Epithelium only develops from epithelium, blood vessels only from blood vessels, etc. The formation of unlike tissue is termed metaplasia, and tissues nearly related can be formed from one another. Thus it is possible for the several simple forms of epithelium to be transformed into one another, as when the interior of the uterus becomes covered with squamous epithelium, or when islands of squamous epithelium are formed in the trachea. The various forms of connective tissue can be formed from one another. In chronic inflammatory conditions both cartilage and bone can be formed in connective tissue at a distance from normally situated cartilage and bone. Tissues wholly unlike, representing a wide differentiation, cannot pass into one another. The same holds true for the tumors. A tumor representing a definite tissue is only formed from such tissue, an epithelial tumor arises only from connective tissue. This holds good even for the differentiated epithelial structures. A tumor of the squamous epithelial type only arises from squamous epithelium, a cylindrical cell carcinoma only from a surface covered with cylindrical epithelium, a glioma only from pre-existing neuroglia. But there seem to be many exceptions to this rule. There are certain tumors which differ in all respects from the tissue from which they apparently spring. It is not uncommon to find a tumor in the kidney surrounded by kidney substance and apparently springing from this, which repeats the structure of the adrenal gland. In the same way tumors of the parotid may contain epithelium very unlike the epithelium of this gland and in addition cartilage and other structures. In tumors originating in the genital glands we may find among a variety of tissues highly differentiated epithelial structures. Then tumors are to be explained in two ways. They either develop from cells such as the germinal cells, male or female, which in themselves carry the capacity of forming the further differentiated tissue, or they develop from portions of embryonic tissue which have in the course of development become separated from their organic connections and hence do not undergo further development. These tumors of complex structure are termed "teratomas" from the analogy which they show to the malformations, or embryomas from the similarity of their tissue to that of

the embryo. As we shall see later this theory of embryonic inclusions plays an important part in the etiology of tumors.

Of the cause of tumor formation our knowledge is most deficient. The theories which have been advanced and in many cases defended with great ingenuity may be considered under three heads. First, the traumatic theory, which assumes that a tumor forms in consequence of an injury to a part. It is probable that this theory has a wider acceptance than any other. It is based largely on statistical evidence. A person presenting a tumor is asked in regard to an antecedent injury. The character of the injury and the length of time which has elapsed between its receipt and the appearance of the tumor is little considered. There is a tendency always to connect a present with some antecedent event, and careful inquiry can usually elicit a history of injury which would have been otherwise forgotten. The tendency to refer a tumor to an injury seems to me very much like the widespread belief of the laity that a malformation may be due to some event which has produced a mental impression on the mother. The examples most usually cited as evidence of the relation between tumor and trauma are the carcinoma of the lower lip in man, supposed from the habit of smoking, and carcinoma of the scrotum which develops in chimney sweepers as a result of the constant irritation produced by the soot. It is perfectly true that the carcinoma of the lower lip is much more common in men than in women and that the habit of smoking is more prevalent in men. But the traumatic theory does not explain why the tumor develops chiefly on the lower lip. Carcinoma of the cheek is, if anything, more common in women than in men, notwithstanding the more frequent injuries produced by the shaving habit. Epithelial tumors do not appear on those portions of the surface of the body which are most subject to injury. The epithelial carcinoma is comparatively rare on the hands, and almost unknown on the feet. Carcinoma of the rectum does not appear as a rule immediately at the anus, where we might suppose that injury and irritation would be greatest, but higher up in the gut and at the point where the squamous epithelium of the skin joins the cylindrical epithelium of the alimentary canal. It has been held that a trauma may act in two ways in producing a tumor. In one theory the cells may be excited to proliferation and this may continue, finally leading to the production of a tumor. The matter of cell proliferation is not as simple as it appears on first sight to be and is only one of the phenomena which the tumor presents. The surest way to produce a proliferation of cells is by an injury. Depending upon the character of the injury there may be a great difference in the degree and the character of the proliferation. The action of certain bacteria is characterized by the formation of new cells in their vicinity, and the new tissue produced may be so characteristic that we can determine from it the causative agent, as in the case of tubercle and leprosy bacilli. In other cases around a simple injury a tissue is produced which differs from the normal tissue of the part in the abundance and character of the cells, which extends considerably beyond the territory immediately injured and which has a certain similarity to the tissue of certain tumors. Certain toxic substances, particularly bacterial products, excite proliferation in tissues apparently not affected by the direct injurious action of the agent. One of the most striking examples of proliferation is seen in the lymph nodes in the vicinity of the vaccination area in vaccinia. The typhoid toxin has a remarkable influence in producing proliferation of the endothelial cells, particularly in the lymph nodes and spleen. Other agents may excite to proliferation the peritoneal epithelium or the cells lining the capillaries of the glomeruli of the kidneys. All of these examples, however, whether acting locally to the injury or at a distance, can only be regarded as in the category of regeneration. The injurious substance, whatever its nature, affects the interrelation of cells or systems of cells with each other and with the organism as a whole and proliferation takes place until the normal balance is restored. In certain cases, as between the epithelium and the connective tissue, one tissue seems to hold the other in check. In case of continued impairment of the connective tissue, the epithelium, where it comes in contact with such tissue, has the power of invading it and growing as in an epidermoid carcinoma. As soon as the limit of the injured tissue is reached the epithelial growth ceases. All of these examples are far removed from analogy with tumors. The new tissue does not continue to grow as a parasite and independently; it ceases when the integrity of the organism is restored and when the action of the agent producing the injury is removed.

In the second place it is held that the injury may lead to tumor formation, in that by means of it cells are separated from their organic connection with the tissue to which they belong and that such separated cells may assume independent characters and become the origin of tumors. Ribbert was formerly inclined to assign to such separation and displacement of tissue an important rôle in the production of tumors. There is no experimental evidence for such view. Tissues so displaced either after remaining a time are absorbed and disappear or they become permanent and grow as in their old situation. There have been a great number of such experiments in which both adult and fetal tissues have been separated from their normal connections and implanted in other parts. Embryonic and fetal tissues so displaced show a greater activity of growth than adult tissue, but finally are, like these, absorbed and disappear. In considering the effect of trauma in the production of tumors the very numerous experiments which have been made on man are usually left out of consideration. I allude to effects of surgical operations. In these the most varied injuries are produced. In most cases in addition to the acute injury involved in the incisions there is combined the chronic injury

and irritation of the sutures. Moreover, the most ideal displacements of tissue are produced. Cells and tissues in greater or smaller masses are separated and included in foreign tissue. It is probable that in every suture placed in the skin epithelial cells are dragged into the subcutaneous tissue, and this is more particularly the case in intestinal surgery. Yet I have never heard of an instance in which a tumor, with the possible exception of a keloid, appeared in the site of a suture after a surgical operation. Most surgeons, I think, hold with greater or less tenacity to the traumatic theory of tumor formation, and yet the thought of the possibility of a tumor following their traumas does not enter into their calculation. In any consideration of the traumatic theory it must be remembered that tumors of various sorts are quite common pathological conditions, that traumas are also common and that combinations of the two incidents might be frequent and striking. The theory lacks all experimental confirmation and, as it stands at present, it has much the same footing as does the theory of maternal impressions as a cause of malformation. In both there are many striking coincidences.

Another theory which has had many defenders in the past two decades, though less now than formerly, is that of living parasites being the cause of tumors. In the first place an analogy was sought between certain of the infectious diseases, especially tuberculosis, and the malignant tumors. At first sight the analogy seems striking. In both there is a characteristic tissue produced, and a primary focus from which the disease extends, the extension taking place by means of the blood and lymphatics. There is, however, this striking difference: In the case of the tubercle there is an agent, the tubercle bacillus, which is carried to various places and excites proliferation in the various tissues leading to the formation of the tubercle. In the malignant tumor it is the tumor cell which is carried from place to place and this does not excite proliferation but itself proliferates. The cancer cell has its analogy not with the tissue which is produced by the bacillus but with the bacillus. The part which the tissue plays is to act as a host, in greater or less degree hospitable to the invader. The tissue reaction which is often seen around a tumor metastasis is the analogue with the tubercle. That it is the tumor cell to which the metastasis is due is an easily observed fact. In favorable cases it is possible to follow the formation of a metastatic nodule from a single cell, and isolated cells are often found in the lymphatics and blood vessels on their way to lodgement and metastasis production.

Support was found for the bacterial theory in the fact that cultures made from tumors often showed the presence of bacteria. It was soon found, however, that these bacteria were not specific, that they were found chiefly in tumors to which bacteria had access by ulceration and that they represented nothing more than common, invading wound bacteria. As we have become better acquainted with the different classes of infectious agents each class in turn has undergone the odium of accusation as the etiological agent of tumors.

Following the bacteria the blastomycetes had their turn. They were not only found in tumors as were the bacteria but tumors were said to be produced by the injection of pure cultures into animals. Certain of these organisms are infectious for animals; they find in their tissues conditions favorable to their growth and produce circumscribed nodules varying in size which to the naked eye greatly resemble tumor metastases. As in the tubercle, histological examination shows that the nodule is composed of actively multiplying organisms and cells coming from the tissue.

The protozoa seemed to offer a still more favorable field for etiological quest. Many of these are intracellular parasites, and in the course of their cyclic development they assume a variety of forms within the cell. No infectious agent produces a lesion which seems to have such an analogy with the tumor as in the coccidial disease in the rabbit's liver. The organism here enters the epithelial cells of the bile ducts. These cells proliferate with great rapidity, papillary ingrowths into the ducts are formed and circumscribed nodules are produced which have, both to the eye and microscopically, a striking similarity to papillary and intracanalicular papillomata. But the cells of the nodule are not infectious; they are produced by the action of the coccidium, and apart from this organism they have no independence. The striking morphological changes which are produced in the development cycle of the coccidia also led to the belief that certain small bodies, often found included in tumor cells, chiefly in carcinomas, were forms in the developmental cycle of some protozoan. As knowledge of the protozoa increased and better technical methods for their study were developed this has appeared always more improbable. There are undoubtedly certain microscopic things often found included within tumor cells the nature of which we do not know. Their character probably varies; some of them show similarity in form and size and seem of the same character, but others vary in all respects. Nothing approaching a protozoal cycle has been made out, and the inclusions are best explained as products of cell and nuclear degeneration, or products resulting from inclusion of other cells, or products of cell secretion.

And finally the spirocheta have had their turn. They have been described in the transferable tumors of mice and in turn shown to be a common reinfecting organism in the mouse, and their occasional presence in tumors to be explained as is the occasional presence of bacteria. Further support of the infectious theory was given by the discovery that the tumors of certain animals are inoculable. Carcinomata of mice are inoculable and a few other tumors, both carcinomas and sarcomas, have been found in rats which were capable of transmission. In the ordinary inoculation procedure small pieces of tumor are rubbed up into an emulsion which is injected beneath the skin, or a small piece of tumor tissue is placed in an incision beneath the skin. But this has been shown to be very different from the transmission of an infec-

tious disease. The infectious disease is transmitted by transferring to the inoculated animal the cause, and this growing in the tissue produces the lesions by its reactions on the tissue. In the transference of the tumor the tumor cells grow in the inoculated animal just as they would grow in a metastasis. It is here again the tumor cell which has the capacity of a parasite, and not an inoculation of an infectious agent, which causes the tumor cell to form. The only parasite it would be possible to conceive of would be one living within the cell and transferred with the cell. The defenders of the parasitic theory seem to have had in mind only tumors of the carcinoma type.

But all tumors have so much in common that any cause must be equally applicable. Moreover; there must be a different cause for every tumor, certainly our knowledge of infectious diseases forbids us to believe that the same parasite can in one instance produce a carcinoma, in another a fibroma, and in another a teratoma. The parasitic theory could give us no explanation whatever of the congenital tumors. Take the example of a congenital tumor of the kidney, in which the tissue more closely resembles the Wolffian body than it does any adult tissue, or the congenital tumors of the retina in which there are embryonic neural structures, or the glioma of the coccyx in which neuroglia is found far removed from its normal situation, and it is impossible to think of an infectious agent producing such formations.

Some analogy has even been sought in the comparison of the infectious nodular growths in plants with true tumors. These, however, are not tumors except in the sense that the coccidial nodule in a rabbit's liver is a tumor. Again, tumors seem to be more common in those organs of the body which are most secure from their structure and situation from ordinary infections. Apart from the accidents which may happen in pregnancy and lactation there are few infections which have their seat either in the uterus or in the mamma. It would be useless to go on enumerating the arguments against infection by living organisms being considered a cause of tumors. Every theoretical consideration is against the theory and not one proven fact has been shown as a substantiation of the theory. It is, however, interesting to see how stimulating to knowledge an hypothesis even with so little in its favor may be. It was brought forward at a time when the limits of pure anatomical research on the subject by the methods then in use seemed to be exhausted. It served to stimulate the imagination and to again turn the attention of able investigators to renewed research, and the most important of the knowledge we have on tumors may be traced to the influence of the hypothesis. The literature on the subject, both pro and con, has reached an extent that it is almost impossible for one to control it. It would be absurd to say that the hypothesis cannot be true, but if an infectious living organism be found, which will produce a growth having all the characteristics of a true tumor it must be an organism of a different class, and act in a way at variance with all we know of the action of infectious organisms.

The third theory of tumor formation is that known as the embryonic or germinal theory. This theory has so far held its ground much better than either the traumatic or the infectious theory. Although not original with Cohnheim it was advanced and defended by him with so much vigor as to have become known as the Cohnheim theory. Briefly stated, this theory assumes that in the course of embryonic development, certain of the tissues do not undergo perfect development but remain in an imperfectly developed or embryonic condition and are included within the developed tissues. It is assumed, further, that in the course of embryonic development in the opposing intergrowth of tissues, and in the complexities of tissue formation which then take place, such separation of embryonic tissue easily takes place. Such separated tissues will then be abnormally situated or included in other parts, and may go on to complete anatomical or functional development as is seen in the accessory spleen, adrenal gland, and pancreas, or they may remain undeveloped or imperfectly developed. Such embryonic or imperfectly developed portions of tissue withdrawn from the influences of the interrelations of parts would be capable of life as independent of the organism as a whole as a parasite would be. The cells would retain the embryonic capacity of growth and be free from the restrictions of growth which are imposed upon tissues by their relations with each other and with the body as a whole. This theory brings the subject of tumors in close accord with the malformations, in thus referring them to an embryonic origin. This theory accords best with what we know of tumors, and so far as I know there is nothing incompatible with it. It is perfectly certain that in embryonic development such separations of tissue not infrequently take place, and also certain that tumors do develop from such separated parts. Thus we may find portions of fully developed adrenal tissue included either in the capsule or in the cortex of the kidney, and we also not uncommonly find tumors in this situation which have the characteristics not of the kidney but of the adrenal gland. Even tumors which are seemingly of glandular origin often do not arise in the substance of glands but in tissue adjacent to but not connected with the gland. A great many examples might be cited as evidence that tumors frequently originate in such misplaced tissues, but the theory does not give a complete explanation. It does not explain the growth; it does not show why these misplaced tissues develop into tumors; why the development is associated with certain periods of life; why it is not possible to produce tumors by the artificial inclusion of embryonic tissue; why the inoculation of tumors succeeds only in certain animals. To this hypothesis as to the origin of tumors which seems to have so much in its favor there must be added another as to cause. We must assume that at a certain period these germinal remains gain a power which enables unrestricted growth to take place, or what amounts to the same thing, the other tissues lose their power of restraining and

regulating growth. It would be impossible in the limits of this paper to enter into a consideration of this part of the subject.

Nor will it be possible for me to take up the subject of the experimental study of tumors which is being actively prosecuted in a number of laboratories and by men well qualified for research. It is from such experimental study in which all of the conditions can be controlled that we have most to hope. The subject of tumors is, further, one of general biological interest and should be attacked by the embryologists and zoölogists who bring to the investigation both new methods and new points of view.

Original Articles.

STENOSIS OF THE PYLORUS IN INFANCY.*

BY CHARLES L. SCUDDER, M.D.,
Surgeon to the Massachusetts General Hospital: Lecturer on Surgery, Harvard Medical School.

We all are more or less familiar with stenosis of the pylorus in adult life, whether it be caused by a benign or a malignant lesion. Stenosis of the pylorus occurs also in young babies. It presents a unique pathology — benign in its anatomical characters but most malignant in its fatality. It occurs with greater frequency than is generally supposed. It is too often overlooked. The diagnosis is sometimes confusing. One type of the disease is almost invariably followed by death if treated unintelligently.

It is for these reasons that I propose to present for your consideration the salient facts concerning stenosis of the pylorus in infancy and its surgical treatment. These are subjects of the very greatest practical importance to the general practitioner of medicine, the pediatrist and the surgeon.

FREQUENCY.

Scudder and Quinby, in May, 1905,[1] two years ago, analyzed all cases of this disease. During seventeen years' literature, since 1888, 115 cases were recorded, 55 autopsies and 60 operations. Since this time, during the past two years, from May, 1905, to May, 1907, about 40 cases have been reported. Papers upon this subject have contained the records of isolated cases treated medically and surgically. No very important addition to our knowledge of the subject has been made during this time.

The pathologist at autopsy and the surgeon at operations upon the living baby have together convinced all hitherto doubting pediatrists and internists that this disease exists as a distinct entity and that it demands active consideration in the differential diagnosis of the acute abdominal diseases of early life. In those communities in which there exists an accurate knowledge of this disease cases are being repeatedly discovered. Stenosis of the infantile pylorus is not uncommon.

* Read at the Annual Meeting of The Massachusetts Medical Society, June 11, 1907, Section in Surgery, and at the Annual Meeting of the Dubuque (Iowa) County Medical Society, June 18, 1907.

[1] The Jour. of the Amer. Med. Asso., May, 1905.

PATHOLOGY.

The findings are constant and uniform. Occupying the position of the normal pylorus is a tumor, small, smooth, oval, hard, movable and without adhesions. The tumor varies in size, averaging that of a hickory nut. This tumor has a constant structure — a hyperplasia of the circular muscular fibers of the pyloric segment. There is also either an hypertrophied or a thinned stomach wall, occasionally a dilated esophagus, a narrowing of the pyloric lumen, an hypertrophy of the mucous membrane and a collapsed empty intestine.

ETIOLOGY.

The cause of the hyperplasia of the circular muscular fibers is unknown. There are three hypotheses suggested to explain the conditions:

1. That of Pfoundler — a spasmodic contraction due to post-natal gastric irritation.
2. That of Nicoll — a simple overgrowth of the sphincter muscle of the pylorus.
3. That of Thompson — an inco-ordinated action of the stomach muscles dependent on functional disorders of the gastric nervous system, resulting in gastric spasm.

A discussion of the etiology is fascinating but unprofitable.

CLINICAL PICTURE.

An apparently healthy breast-fed child is born. Upon the third or fourth day he vomits whatever he may have taken from the breast. The vomiting continues at irregular intervals, and is evidently independent of the quality of the food. The child loses weight. All kinds of artificial foods and modifications (home and laboratory) of cow's milk are used without permanent success. He wastes away, weakens and dies.

The cause of death affixed to the certificate is one of the following: "Infantile atrophy," "Gastric irritation," "Sub-acute gastritis," "Inanition," "Chronic gastritis," "Gastro-intestinal catarrh."

If in cases of this kind observations were made with accuracy the following significant facts would often be found: the baby's tongue is perfectly clean; the breath is sweet and natural; the appetite is a little less ravenous than usual; though hungry he doesn't feed greedily, he is soon satisfied.

After feeding, the baby shows signs of abdominal discomfort, his face is covered with grimaces, he wriggles about uneasily, he even cries wth evident pain, he then vomits. The vomiting is very forcible, through the nose as well as mouth; is often mistaken for a simple regurgitation from a full stomach. The hypertrophied stomach wall contracting violently against the obstruction at the pylorus causes the gastric contents to be expelled forcibly through the relaxed cardiac orifice.

The frequency of the vomiting is dependent upon the number of feedings and upon the amount taken at a feeding. The quantity vomited varies

with that received into the stomach. The material ejected is the milk and food taken. There is usually no bile, no mucus and no blood in the vomited material. There is almost never hyperacidity of the stomach contents. After the vomiting the baby is quiet and sleeps until he next feels hungry.

If the abdomen is carefully palpated a distinct tumor may be felt above and to the right of the umbilicus. This tumor being small and partly covered by the liver is not always readily felt. An enlarged mesenteric gland has been mistaken for a pyloric tumor. If the abdomen is inspected in a good light immediately after a feeding, a strong gastric peristalsis will be noticed. This was very evident in two of the cases I have to record.

The dejections are somewhat variable in character, but because of the slight amount passing through the pylorus they are small and meconium-like, occasionally fecal in character, at times watery.

The stomach will be found dilated in proportion to the duration and degree of the obstruction. Epigastric fullness and a sunken lower abdomen are suggestive.

The child loses in weight despite treatment, because of starvation.

DIAGNOSIS.

Characteristic vomiting; a pyloric tumor; visible gastric peristalsis; gradual and progressive loss in weight despite skilled feeding; this sequence of these signs is significant. An absence of a *seemingly important* sign is of comparatively little consequence. The total picture is most suggestive.

The obstruction to the pyloric lumen caused by the tumor is variable. Difficulty in diagnosis is measured by the degree of obstruction. There is little doubt about the diagnosis if the obstruction becomes complete. If on the other hand the obstruction is incomplete or partial, there will be doubt.

An obstruction may result from a tumor at the pylorus, also from a spasm of the pyloric muscle independently of tumor formation. The symptoms may simulate a chronic gastric indigestion. Each of the signs found in cases of pyloric stenosis may be present in cases of infantile indigestion, but the particular quality and sequence of symptoms characteristic of pyloric stenosis are absent. The completed picture is wanting. Vomiting is not always symptomatic of obstruction in young babies, cerebral disease may be imminent. There is little danger of confusing an intestinal indigestion with pyloric stenosis.

Pyloric stenosis in infants if untreated is usually fatal. A few cases are reported in which medical treatment is said to have effected a cure. Unfortunately no medically treated case has been demonstrated to have had the disease. Surgical treatment has cured more than half of these desperate cases.

OPERATIVE TREATMENT.

The degree of the obstruction and the general condition of the child should be the basis for treatment. The cases arrange themselves into three groups:

1. The obstruction is evidently complete or almost complete — operation is demanded at once.

2. The obstruction is partial and the child is not doing well and is losing weight — operation is likewise indicated.

3. The obstruction is partial and the child is doing fairly well, and is not rapidly losing weight. With this third group one may be justified in experimenting with medical treatment, but only for a short time. It must always be remembered that remissions of symptoms occur. Improvement may be but temporary; the strength of the child must not be allowed to greatly diminish before operation is done. In this third group (in which obstruction is partial, and the child is doing pretty well under medical treatment) are found the so-called cases of "pyloric spasm" which are supposed to yield to medical coaxing. Such is the case reported by J. L. Morse, in September, 1906.[2]

It is more and more evident that prolonged medical treatment of certain of these cases is irrational. The risk and danger to the child's life is often greater than if operative treatment were instituted early. Heubner of Berlin presented a series of cases all treated medically without operation. His mortality rate is low. I believe, from a careful analysis of his cases, that deductions cannot be drawn from his 21 cases till they are followed a longer time. It is questionable if he had to do with true pyloric stenosis.

There are very real dangers attending the treatment of this disease. The immediate danger is apparent, viz., the letting slip the opportune time for operation, misjudging the condition of the child. The later danger is that there may occur in youth and in adult life gastric difficulties dependent upon the persistence of infantile conditions. Instances are recorded by Beardsley, Sonnenberg, Hansy and Shaw which make this latter possibility very real. Both of these dangers are probably eliminated by operation.

The mortality following operation still remains high — but the mortality of operation upon weak and wasted infants will always be large. Many different operators with varied technique and the consequent absence of exactness will always record a high mortality in these desperate cases. An exploratory laparotomy upon a young infant in which the diagnosis is in doubt, and in which improvement has ceased, is certainly wise. I have to record one such exploration. The operation of choice in cases of pyloric stenosis is a posterior gastro-enterostomy, done with clamp and suture. The Loreta operation of divulsion and pyloroplasty are two other procedures thought well of by some.

There is little doubt of the existence of cases

[2] BOST. MED. AND SURG. JOUR., Sept. 27, 1906.

which simulate pyloric stenosis with tumor, and which improve and apparently recover under some one or more of the following procedures: resting the stomach; lavage of the stomach with weak alkalis; warm abdominal poultices; nasal tube feeding; the administration of opium and atropine; the giving of opium before feeding (one eightieth of a grain); the use of alkalis; experimentation with food by changes, both in quality and quantity; rectal feeding.

That there actually are cases[3] of pyloric stenosis with tumor, which have recovered completely under medical treatment has not yet been demonstrated. Until this demonstration is made, I prefer the certainty of surgical treatment to the uncertainty and very high mortality of medical experimentation. Seefish in 1904 mentioned three cases which "recovered" under medical treatment, and were all operated upon before twelve years of age. Surgical supervision of medically treated cases will help to diminish the large mortality of cases treated medically.

From my own limited experience of the past two years, I have to report 5 cases. I will not at this time relate these cases in detail (two have been previously recorded), but will mention briefly certain facts of interest concerning each.

In the first case operative treatment was withheld because the child was moribund. The stomach of this child exhibited at autopsy a typical pyloric tumor and an hypertrophied stomach wall.

In the second case an exploratory operation was done upon a very sick child, and the tumor was not present. The child has since recovered, and is, after a stormy experience with various foods, increasing in weight.

Of the 3 remaining cases, in each of which a posterior gastro-enterostomy was done:

Case III[4] has the distinction of being the youngest case yet operated upon; he was fourteen days old. He had been artificially fed. The stomach was not very large.

Case IV[5] was twenty-four days old. He had vomited from the third day after birth. The stomach wall was thickened. He had been breast fed.

Case V [recorded here for the first time; to be reported in full elsewhere] had likewise been breast-fed. He was twenty-two days old. The stomach wall was edematous, and markedly thickened in the pyloric part.

In the last 3 cases the signs of the disease were typical. The tumor was characteristic. All 3 cases recovered from the operation. All have been followed, and each child is now robust and well, two years, one year and ten months, and seven months, respectively, since the operation.

Sufficient time has now elapsed to make it possible to know the real results of a gastro-enterostomy in these cases. I have succeeded in determining the condition of certain cases of other observers several years after operation. The cases of Abel, Löbker, Fritzsche, Kehr, Schotten, Giles, and Stiles, quoted in the original paper,[6] are alive and well; four of them six years, one four years, one three years, and one two years following operation. These results are significant. They demonstrate: 1, that these presumably otherwise normal children have escaped the difficulties of obstruction; 2, that nutrition does not suffer following gastro-enterostomy in cases of infantile pyloric stenosis. Posterior-gastro-enterostomy is an effective measure under these conditions.

These cases of gastro-enterostomy following pyloric stenosis in early life form a series of great experimental value. The operation is done under almost normal physiological conditions, excepting for the mechanical obstruction. Presumably no other disease exists in these tiny new-born individuals. There is very little disturbance of digestion. The results are absolute. The effects produced by the operation are uninfluenced by disorders of digestion and other diseased states so commonly found in adults. These results, therefore, go far to confirm and substantiate the evidence accumulating from adult cases that posterio-gastro-enterostomy properly performed is physiologically harmless. Pyloroplasty and gastroduodenostomy, whether of the Kocher or Finney type, are theoretically and physiologically ideal procedures. Posterio-gastro-enterostomy is proved to be physiologically satisfactory, and in these cases of infantile stenosis is certainly anatomically the choice of all procedures. Whether the obstructed pylorus recovers itself after the gastro-enterostomy and functionates naturally after a time is as yet undetermined, because there are no records of autopsy findings long after operation. Katzenstein by his study of alterations of stomach digestion following gastro-enterostomy and Joslin's studies in metabolism of fats lead one to view with interest these cases of gastro-enterostomy in infants, particularly with reference to the subsequent nutrition of the individual. No instance of peptic jejunal ulcer is recorded following a posterior gastro-enterostomy for pyloric stenosis in infancy.

I may be pardoned if I mention here some of the practical matters which one treating these cases surgically will find helpful.

Preparation of the baby for operation. — The baby is weak. A nutrient and stimulating enema containing salt solution and whiskey, to make ℥ij, given very slowly through a soft rubber catheter, will help the child remarkably, especially if there is time to repeat it before operation. The stomach need not be washed out, for the vomiting which has persisted has usually left the stomach empty. The skin of the abdomen is very sensitive. Local preparation should be restricted to bathing the abdomen after etherization, first with castile soap and water applied

[3] Such are supposed to be the cases recorded recently by Reinach, Marx, Murdock, Morse, Harper, Griffith, Sutherland, Hutchinson, Neild, Rob, Crahim, and Heubner, all carefully observed and each treated by medical means. The cases have been followed and are known to be free from all signs and symptoms of gastric disturbance from several months to two and one-half years after treatment ceased.

[4] Bost. Med. and Surg. Jour., Dec. 14, 1905.

[5] *Ibid.*, Feb. 22, 1896.

[6] Jour. of the Amer. Med. Asso., May, 1905.

with a gauze sponge (green soap is to be avoided) and then with warm 70% alcohol. The arms and legs are to be covered with sheet wadding or an equivalent, secured best by a little bandaging. The baby may lie upon a blanket, underneath which are two or three warm water bottles, the water not being warmer than 100° F.

The *anesthetic* is preferably ether only. This should be administered by a most skilled anesthetist. Little ether is needed after the abdomen is opened. It is essential that the anesthetic be continued sufficiently to preclude the likelihood of a prolapse of gut from the wound. There is very great shock to a little baby from over etherization.

The *instruments* should be adapted in size to the very small parts to be manipulated. Small short-toothed forceps and small scissors should be used for work upon the gut. Retractors are not needed and their use should be avoided. Retractors may increase shock, traumatize the wound and stimulate post-operative adhesions. I believe that a small clamp is efficient in preventing hemorrhage from the bowel wall, in diminishing soiling of the peritoneum by intestinal contents, and that it facilitates the suture. A needle holder is unessential — it's a time consumer — the fingers make the best needle holder in the operation of gastro-enterostomy. A zero or double zero chromic catgut is satisfactory for the inside intestinal suture, while a fine Pagenstecker linen thread is secure for the inside suture in the gastro-enterostomy.

THE OPERATION PER SE.

The *abdominal wall* is extremely thin. The abdomen may be opened unexpectedly. The *liver is large*. The median incision will be best made both above and below and to the left of the umbilicus. The incision should be large rather than small, perhaps three inches long. The small opening necessitates greater handling of the abdominal contents. The little larger opening enables the operator to secure the jejunum very readily without the trauma of much handling. Nothing should be removed outside the abdomen excepting the parts to be operated on, the stomach's posterior wall and the jejunum. The great omentum, containing little or no fat tissue, is drawn upward as a thin film from over the intestines. Care should be exercised lest the very transparent and veil-like thin gastro-colic omentum be incised too vigorously and the stomach wall itself suffer by being nicked by the knife. The *mesentery of the jejunum* is short in proportion to the width of the gut as compared with the adult mesentery, consequently it is with difficulty at times that the intestine can be brought forward to the anterior stomach wall for an anterior gastro-enterostomy without constricting the transverse colon unduly. In my cases I have made no loops, and have placed the stoma near the origin of the jejunum. The *stoma* in the infant's intestine should be from three-fourths to one inch long when sutured. If a very large stoma is made, obstructive difficulties may be caused by the wall of the gut opposite the stoma blocking its lumen, as suggested first by Cannon. This I have had happen following gastro-enterostomy upon cats. After suture, the parts are returned to their natural places so far as possible, the jejunum to the left of the spine.

In *closing the abdominal wound* no attempt should be made to close by layers. Through and through sutures of silkworm gut are satisfactory. These sutures should not be drawn too tight, for the suture cuts its way through the young skin readily. Some one has suggested that these sutures be tied over bits of tiny rubber tubing to prevent them cutting the skin.

In placing the *sutures* the needle should avoid wounding the large vessels of the suspensory ligament of the liver which may lie very close to the right edge of the wound. The sutured wound is covered with a gauze sponge, and the abdomen is supported by two or three narrow straps of zinc oxide adhesive plaster. Traction on the sutures is reduced thus to a minimum. The position of these plasters may be changed to avoid their chafing the skin. An ordinary binder helps to support the abdomen.

AFTER OPERATION.

Feeding the baby. — The importance of the proper feeding of these tiny little babies after operation for pyloric stenosis cannot be overstated. If the intestinal suture is well placed, the stoma is strong and is in less danger of leaking at first than after some ten days. It is common experience with suture of the intestine in the adult that the second week is the time of death from leakage. The feeding should, if practicable be in the hands of a skilled feeder of babies. Breast milk is the ideal food. Difficulties arise rapidly if an artificial food is needed. The amount to be allowed at each feed must be tentatively determined; fairly large amounts are usually well borne immediately after the operation. The baby is in great need of water, and it is a mistake to keep the total quantity low, especially if the food used agrees.

If breast feeding is possible the baby is allowed to nurse for two minutes at first. The time is gradually lengthened. If breast feeding is impossible it is best to begin with a whey, half ounce every two hours. Two days later may be used a weak modified milk, 2% fat, 5% sugar, 5% proteid, 5% lime water, and equal parts water. Gradually one may increase the richness of this mixture. Post-operative rectal feeding may be needed for a few days. Salt solution enemata are helpful.

The *temperature* is often high, even though there is no evident sepsis. In two of my cases the temperature immediately after operation was 104° F. and 105° F. It represented a normal reaction to this operation. This temperature gradually dropped during six days and then remained normal.

Even though the operation is done upon a weak baby it is not productive of great *shock*. The

baby behaves very much in this particular as the adult after a stomach operation.

Vomiting does not cease with the operation. Vomiting persists for several days and ceases gradually. There was no vomiting in my first case (No. 3) after seven days; in my second case (No. 4) after six days; in my third case (No. 5) after about six days. This post-operative vomiting is less forcible than the vomiting previous to operation, and of course contains a little bile, and may contain a little old blood the first twenty-four hours. The post-operative vomiting may cause a breaking open of the wound, unless it is carefully sutured, with resulting prolapse of the intestine. This has happened in a few reported cases. In one case with which I am familiar replacement of the gut under ether was followed by a perfect recovery.

From the anterior abdominal wound may start an oozing of *blood* the second or third day. This occurred in one of my cases (No. 5). It was difficult to control this oozing until a suture was taken through the whole abdominal wall. The amount of blood lost was not great, but was sufficient to make an appreciable difference in the facies of the child. Little babies bear a hemorrhage poorly.

There may be considerable *abdominal distention* following operation. This is relieved by small suds and glycerine enemata. In one case (No. 2) of exploratory laparotomy, six days after birth, there was considerable difficulty in keeping the sloughing *umbilical cord* from infecting the abdominal wound at the time of operation. Immediately after operation the cord was kept dry with boracic acid powder and neither a primary nor a secondary infection occurred. A few cases are recorded in which convulsions followed operation. These convulsive movements may be allied to the cases of gastric tetany occurring in adults. One case with which I am familiar recovered after these convulsive attacks.

Hernia, or a bulging of the abdominal wall at and in the region of the cicatrix, has occurred in two of my cases. This bulging has not proved sufficiently great to demand operation. A snug abdominal binder should be worn for one year after operation. The suture had best be removed on about the seventh day, or before much cutting of the skin is present, and the abdominal wall supported by zinc oxide adhesive plaster strips. In no group of cases with which I am familiar is the elimination of all the causative factors of shock so rapidly effective in establishing convalescence as in these cases of infantile pyloric stenosis.

Speed, implying familiarity with one's technique; absolute asepsis; hemostasis; a minimum amount of handling of the gut; an absence of trauma to the abdominal wound; conserving the body heat — these are the requisites of success in operations upon these tiny individuals.

THE Pasteur Institute of Minnesota at Minneapolis is fully equipped and ready to receive patients.—*Journal American Medical Association.*

LEAD POISONING IN A RURAL COMMUNITY.*

BY WILLIAM N. COWLES, M.D., AYER, MASS.

THE purpose of this paper is to give an account of my experience with lead poisoning among the people of several country towns in my vicinity, viz.: Harvard, Shirley, Littleton, Acton and Ashby, Mass.

The persons affected have been chiefly residents of farm houses, using water drawn from wells or springs through lead pipe. I have observed the cases during the last ten years, at first rarely, but later with increasing frequency, as my interest in the subject and ability to recognize the condition in its various forms have increased.

No attempt will be made to treat of lead poisoning in general. The cases will be related as briefly and with as little detail as possible, consistent with establishing the nature of the affection, and the extent and variety of the damage due to this intoxication.

Mrs. W., sixty-six years of age, consulted me in June, 1899, on account of what she called rheumatism; she was well and active until her present illness. The trouble began eight months before, in the hands, soon spreading to the shoulders, neck, feet, and knee and hip joints, becoming all the time steadily worse.

The finger and wrist joints were swollen and stiff; there were pain and tenderness in the course of several large nerve trunks, both brachial regions being affected.

The pain was much worse at night; she walked with difficulty on the level and could not ascend steps without help; she could not dress her hair, and fed herself with difficulty. There was no apparent paralysis. Lead poisoning was suspected, but inquiry showed that the water supply at her house was drawn from a well by means of a well-sweep and wooden bucket.

No source of lead could be discovered after persistent inquiry, until the patient recalled that about two years before an old lead clock-weight had been accidentally dropped into the well. The well was pumped free of water, and the clock-weight found and removed. In two weeks Mrs. W. noticed an improvement in her lameness, and in four months she was entirely well. She lives at the same place and uses water from the same well, but has had no return of the lameness.

This piece of lead has about 32 square inches of surface. The smaller sizes of lead pipe have more surface than this for each foot of length.

Lead pipe in a well usually goes several feet under water, giving many times the surface of this weight for solution of lead from the *outside* of the pipe.

G. H. C., forty-six years of age, lived with his family on a farm in New Hampshire, for twelve years, from 1891 to 1903, using spring water carried by lead pipe. In April, 1903, he moved to a farm in Littleton, Mass., where he also used spring water running through lead.

In the fall of 1904, a year and a half after moving to Littleton, C. began to be troubled with shortness of breath on exertion. His heart was enlarged, and his radial and temporal arteries tortuous and thickened. A year later lead poisoning was suspected; lead was found in the water used by the family, and iron pipe was put down in place of the lead. Seven months after the lead pipe was removed C. was given a course of potassium iodide, and lead was found in his urine.

At present he bears exertion a little better, but his heart is still enlarged, and his arteries still thick and

* Read at the Annual Meeting of The Massachusetts Medical Society, June 12, 1907.

hard. He has never before had any serious sickness, and comes of a long-lived family.

Mrs. C., thirty-seven years of age, wife of G. H. C., a pale, thin, and delicate looking woman, after living a year and a half in Littleton, began to be troubled by obstinate constipation; the bowels could be moved only by powerful cathartics or enemata; the colon could be felt through the thin abdominal wall like a solid cord. At times the introduction of an enema was impossible, except under the influence of a dose of morphine. The evacuation at such times consisted of small, hard lumps of feces, with much mucus in shreds and strings.

I made a diagnosis of mucous colic, and prescribed a coarse vegetable diet, as recommended by Von Noorden. The patient held to this diet faithfully for several months, with great relief. At this time I flattered myself upon the acuteness of my diagnosis, and the successful treatment of the case.

A year later, in the fall of 1905, Mrs. C.'s abdominal trouble returned with great severity. There were intense colic, constipation, slow pulse, flat abdomen, a distinct lead line on the gums and the discovery of lead in the household water supply. The mucous colic had become plain lead colic; the usual treatment of lead poisoning brought complete relief; Mrs. C. is now well with gain of flesh and ruddy color, and has had no return of the colic, either mucous or lead.

Mrs. G., mother of Mrs. G. H. C., suffered from a persistent and debilitating diarrhea, for two and a half years from the time of moving to Littleton with her daughter, until lead was eliminated from the family water supply, when she recovered, and has been free from diarrhea for the last year and a half.

T. G., seventy-eight years of age, has lived in a farm house in Harvard, Mass., since 1899. The house was then supplied by water drawn from a well through 275 feet of lead pipe. Two years later, in the spring of 1901, his right hand, right leg, left hand and left leg, in the order named, became weakened to such an extent that he was confined to his bed. At the same time he suffered severe but intermittent abdominal pain. The abdominal symptoms and the weakness of his arms and legs became steadily worse, until September, four months in all, when the extensor muscles of both hands and both feet were paralyzed. His abdomen was hard and tender. There was a prominent lead line on his gums. The family was then supplied with water known to be free from lead. He made a tedious and partial recovery. At present, six years after his lead poisoning, his grasps are good, he opens his hands partially and feebly only. He walks with some difficulty, and falls if his knees happen to become much bent. The extensor muscles of his forearms, thighs and legs are wasted and weak. He says he feels well. He has a ruddy complexion, soft peripheral arteries and a normal urine.

J. M., forty-seven years of age, has lived for the last ten years on his farm near West Acton, Mass. Seven years ago he had a serious sickness accompanied by great pain in the abdomen, for which he was treated at the Massachusetts General Hospital where he was told that lead poisoning was the cause of his trouble. He has had a similar sickness every summer since.

I was first called to him in the summer of 1905, for a well marked lead colic, in which he had great pain, constipation, slow pulse, with wakeful and delirious nights. His skin was of a muddy pallor, his hair very gray, his radial and temporal arteries tortuous and hard. There was a plain lead line on his gums.

The family was supplied with water brought from a spring in milk cans. Projecting into this spring was a piece of lead pipe, once used for pumping water into the house. A little probing with a slender stick showed that the water entering the spring came in alongside the lead pipe, after flowing a considerable but uncertain distance in contact with it. There was ample chance for solution of lead from the outside of an old pipe. J. M. was told that this lead pipe was the cause of his sickness, and he was advised to remove it.

A year later, in the summer of 1906, I was called to him again, because of a repetition of his colic, and found the lead pipe still in the spring. He was advised again to take it out. About a month after, he was attacked once more with colic, and the pipe had not been removed. I then told him that he must put away the lead pipe or get another doctor, and he finally got rid of the pipe. Lead was found in his urine at this time. His health has improved, but he is still far from well. After ten years of lead poisoning, at the age of forty-seven years, he looks, talks and acts like an old man.

Mrs. P., eighty-four years of age, has lived for about fifty years in a house in Shirley, Mass. For many years (forty or more) she has been partly crippled with what she called rheumatism. She was not able to walk outside of her house for years on account of lameness of her knee, ankle and toe joints. Her hands were nearly useless. The wrist and knuckle joints especially were swollen and deformed. All these joints were painful and tender, the pain being much worse at night. Many kinds of treatment had been tried without benefit, several at my suggestion. The water supply at this house has always been spring water pumped a long distance through lead pipe. It has been examined and lead was found in it. Two years ago, at my suggestion, water was taken from the public supply through an iron pipe, and the spring water was stopped. Since the change, and with no other treatment, Mrs. P. has lost her rheumatism entirely. She walks with ease and comfort. Her wrist and finger joints are free from swelling and she uses them with much facility.

Mrs. J. E., sixty-four years of age, consulted me in 1897 for "sciatica." There was also a history of rheumatism affecting the joints of the hands, with a long continued, painful affection of one shoulder and arm, the pain being worse at night.

The water supply of the family was drawn through many rods of lead pipe. Lead was found in the water and in the patient's urine. Iron pipe was substituted for lead. Mrs. E. recovered completely and has been free from rheumatism for the last ten years.

Mrs. M. has lived on her farm in Harvard, Mass., forty-seven years. Water for her house comes from a spring, through lead pipe, and contains a dangerous quantity of lead. She has suffered for many years with what she calls rheumatism. Her finger and wrist joints are enlarged and distorted. She suffers pain and lameness in all her extremities. Her health in other respects seems good. Her color is good.

Nellie M., forty-three years of age, daughter of Mrs. M., has always lived at home. She is pale and cachectic in appearence, looking much older than her years. She began to have pains in the extremities, which she calls rheumatism, about twenty years ago. Her left leg and thigh were first affected. Lameness was troublesome, and pain was severe at times. For the last seven years she has suffered much pain in the left shoulder, arm, forearm and hand, worse at night. The left hand trembles with a moderately coarse tremor. She suffers from frequent and severe headaches. These people have been warned many times in the last few years that their water supply is dangerous, but they continue to drink the lead water and suffer the pains.

W. K., fifty-seven years of age, has lived on his farm in Harvard, Mass., eighteen years. During the last five years he has had sciatica, brachial neuritis, and

many other painful ailments of an indefinite nature. In March of this year he was seized with severe headache which lasted for two weeks. He has the appearance of a very old man; his heart is enlarged; his radial and temporal arteries are thickened and hard. His house is supplied with water from a spring, through lead pipe. The pipe corrodes so much that it leaks and requires repair several times each year. The water at the house contains considerable lead. K.'s urine contains a large trace of lead.

Mrs. K., fifty-one years of age, wife of W. K., looks much older. Her hair is completely white. Her skin is of a grayish pallor.

In the spring of 1906 she had a severe brachial neuritis. A year later she suffered from a sharp attack of lead colic. K. has been warned of the danger of lead poisoning by Dr. Royal, of Harvard, and myself many times during the last few years, but he has only lately become a believer and turned from drinking lead water.

A. S., fifty-four years of age, first consulted me in 1904, on account of a troublesome vertigo. His heart was enlarged; his peripheral arteries thickened and tortuous; he had a pulse of high tension and the urine of chronic interstitial nephritis. Lead was found in his urine. For ten years he had been using rain water stored in a cistern with distributing pipes of lead. A year later, in 1905, a progressive cerebral degeneration appeared in S., and he died in the summer of 1906.

Mrs. S., Harvard, Mass., in middle life, consulted me several years ago because of recurring pain in the abdomen. She had a plain blue line on the gums and was using water brought to her house through lead pipe. I warned Mrs. S. and her husband of the danger of using the contaminated water, but they were skeptical and clung to the lead pipe. Dr. Royal, of Harvard, tells me that Mrs. S, has suffered several attacks of brachial neuritis in the last few years, and that he has had the water at her house examined for lead, with a positive result. In spite of these warnings they refuse to abandon the lead pipe.

Mrs. R., forty-six years of age, has lived for ten years in a tenement house in Shirley, Mass. She suffers greatly with neuralgic attacks, affecting at various times the head, face, both brachial regions and the right crural region. Such treatment as she has received has been of little use. Her house is supplied with spring water carried in lead pipe. Examination of this water for lead is positive.

Mrs. C., seventy years of age, has lived in a cottage house in Harvard, Mass., since 1891. During much of that time she has been greatly troubled with "rheumatism." In the autumn of 1903 she had several attacks of angina pectoris. She was very pale, with swollen ankles and the urine of a chronic nephritis of moderate degree. The family used water drawn from a well through lead pipe. Examination of the water for lead gave positive result, and its use was stopped. Mrs. C. passed a poor winter with much cardiac distress and edema of the legs. In the spring of 1904 she got some relief and has gradually improved since. She now has the urine of chronic interstitial nephritis, with a pulse of high tension and good cardiac compensation. Her life is tolerable.

George H. C., seventy years of age, husband of Mrs. C., lived in the house now occupied by them from 1850 to 1863, and from 1891 to the present time. He has been the victim of dreadful headaches for many years (forty or more). At the time of the discovery of lead in C.'s well water (1903), he was pale and emaciated and suffered frequently from severe headaches, lasting several days at a time. Since the lead water was stopped he has improved greatly in health. He has lost his headaches, has a ruddy color and has put on much flesh.

From 1894 to 1903 Mr. and Mrs. C. passed several winters in California, being much pleased with the effect of the change of climate upon themselves, he always losing his neuralgia and she her rheumatism in California, only to find them again in Massachusetts. Since stopping the lead water they have been as free from these ills in Massachusetts as in California.

Mrs. C., mother of G. H. C., lived in the same house with the same water supply, from 1850 until her death in 1880 at the age of eighty-two years. In 1855 she began to be troubled with "rheumatism," which gradually increased, affecting the hands and feet chiefly. She was completely crippled for the last thirteen years of her life, having comfortable days and intolerable nights.

CONCLUSION.

This group of cases is but another illustration of the many forms in which lead poisoning makes its appearance, and the various kinds of damage done by it.

The acute cases are few; the chronic painful and disabling affections and arteriosclerosis, with the things that go in its train, are in the majority.

My own experience is one of failure for years to recognize lead poisoning as a frequent cause of many of the painful and disabling ills that I have been called upon to treat. I recall many instances of vague abdominal troubles, and of painful and crippling affections of the extremities which the patient called rheumatism, and for which I had no better name, that I tried vainly to relieve, and which may well have been due to poisoning by lead.

Other physicians may have failed to recognize lead poisoning as I have done. Many people look upon what they call rheumatism as something to be endured without hope of relief, and the cause of their ailment is never discovered. Arteriosclerosis comes on insidiously, until some terminal accident occurs, and lead as a possible cause is rarely thought of. It seems fair to assume, therefore, that my cases are but a fraction of those occurring in the same locality, the whole making a heavy burden of pain and disability upon the community.

The use of lead pipe for carrying water is common throughout the whole of rural New England. The mischievous quality of dissolving lead differs, no doubt, in the waters of different localities and at different times. But I believe such use of lead is always and everywhere dangerous, and that the possibility of serious poisoning ought to be more generally recognized than it now is.

Boston City Hospital.

CLINICAL MEETINGS OF THE STAFF, MARCH 21 AND APRIL 18, 1907.

LIPOMA OF THE EPIGLOTTIS.

BY T. A. DE BLOIS, M.D.

If you will look over my right shoulder by the aid of the transillumination lamp, furnished by the better current tap, I will show you three out of my five cases which have come up to-night. First is Mrs. L. B., a patient in the Throat Department, absolutely without

previous history, as regards syphilis, tuberculosis, carcinoma, etc. . . . You will observe on the left margin of the epiglottis a whitish mass. This swelling is easily compressed, is without pain and is apparently a cyst of the epiglottis. I only saw it for the first time to-day. Some day I will cut it, or perhaps, on account of its juxtaposition to the larynx, I will aspirate it.

(Meeting of Thursday, April 18.) I would like to add a few words about the case which I reported a month ago, as a cyst of the epiglottis. Yesterday I again saw this case; it had enlarged very much; it had not ruptured spontaneously as I thought it might; it easily compressed under pressure with the probe; there evidently was no fluid there. Besides this, the tumor had become nodulated. From gross appearances, I should say this was not a cyst, but a fatty tumor, "lipoma." It might, of course, prove malignant; modulated tumors frequently are. Fatty tumors of the air passages are not so rare. I have reported one; Dr. Farlow reported two; some unknown Italian, with questionable veracity, reported thirty. My second case, Miss O. K., has tuberculosis of the larynx. You will see the little yellow masses of tubercular deposit on the epiglottis. By and by it will break down. But what is much more important is the tubercular ulceration of the pillar of the fauces. This is rare. Of course, the prognosis is of the worst.

My third case, Mr. X. L., has tuberculosis of the larynx. He presents the peculiarity of having both the pyriform swelling of the arytenoids and the interarytenoid proliferation of tuberculosis. This will so affect him that he will lose the power of swallowing solid food much earlier than if he had the single lesion either on the interarytenoid space or else on the arytenoids; either one of these is rapidly fatal. But perhaps my friend, Dr. Leland, can give a more hopeful outlook from his varied experience.

I. A CASE OF SLOW-GROWING ANEURISM OF THE AORTIC ARCH. II. PONTINE HEMORRHAGE. III. ANEURISM OF BOTH CAROTIDS. IV. PROFOUND ANEMIA AND PURPURA. V. A CASE OF CARCINOMA INVOLVING THE THYROID GLAND. VI. A CASE OF ACUTE RHEUMATISM WITH MIXED ERYTHEMATOUS AND PURPURIC ERUPTIONS.

BY CHARLES F. WITHINGTON, M.D.

I. This case is interesting, among other reasons, for the fact that we had the patient under observation in this hospital nearly a year ago and have the records and measurements, as well as x-ray plates, to show the progress of the disease in the last twelve months.

The patient is a man of forty-four years. He denies venereal disease. About eighteen months ago he began to have dyspnea and some regurgitation of solid food soon after swallowing it. No pericardial pain; no edema. He entered my service April 1, 1906. There was at that time asthmatic breathing. The right side of the heart was 2 cm. from the parasternal line; above at the level of the second rib, the dullness swung out to 5 cm. from the median line. At the same level dullness extended equally far to the left. There was a tracheal tug and a thrill. The radiograph showed a shadow corresponding to the percussion dullness.

After leaving the hospital he had dyspnea and some regurgitation of food. He felt as if bread and other solids "stuck" in his gullet.

He has recently re-entered the hospital, and the present x-ray plate shows the transverse measure of the aneurism to be about 1½ cm. greater than a year ago. The growth has been to his left, corresponding to the descending portion of the arch. His dysphagia is very marked for everything but liquids. There is a tracheal tug and the right radial pulse is slightly in advance of the left. There is no laryngeal paralysis. There is cough and auscultation; shows an almost complete absence of breathing throughout the left lung; at the same time there is perfectly good resonance all over this lung. This combination, where one can exclude pneumo-thorax, is practically conclusive of obstruction of a primary bronchus. We may then believe that this man has from his slowly growing aneurism, two marked pressures, one on his esophagus and one on his left primary bronchus. While unable to work, he is reasonably comfortable.

II. The specimen shown came from a man of fifty-five, who fell unconscious while at his work, never spoke or moved again and died in three or four hours. There was no localized paralysis, but a slight spasticity of arms and legs. There was a Palinski reaction on the left side.

The specimen shows numerous white plaques throughout the basal vessels. There is a hemorrhage in the center of the pons, with fluid blood and clot and an area of softening about 2½ cm. wide surrounding the clot.

III. The patient is a colored woman, aged nineteen, single. She has a history indicating probable syphilis and there is a diffuse macular eruption over the trunk. She has had several attacks of rheumatism during the last eleven months, with dyspnea and cough. For the last seven months the abdomen has been distended, and two months ago it was tapped and a large amount of clear fluid withdrawn.

She has a dilated heart, 2½ cm. to right, and 13 cm. to left of median line, with a loud systolic murmur at the apex and both systolic and diastolic murmurs at the ensiform. The liver is distinctly palpable through a thin layer of fluid and its edge, smooth and hard, is felt at the navel. There is considerable ascites and fluid in both sides of the back, from the angle of the scapula down, but no edema of the legs.

There is fusiform aneurism, seemingly 1½ inches or more in diameter, involving the right common carotid from the level of the clavicle to the angle of the jaw. It is markedly expansile and shows a murmur and a thrill, both corresponding with systole. The jugular vein pulsates over it.

The left common carotid shows a less advanced stage of the same pulsation. The pulsation is very strong, covering about the same length as the right aneurism, but the breadth is not much over ½ or ¾ inch.

No other peripheral vessels appear to be affected.

The case seems inoperable at present, because, first, of its multiple localization, and, secondly, because of the marked involvement of the heart itself. It is well known that cardiac enlargement is not produced by aneurism alone, even of the aortic arch, and the evident dilatation which we have here indicated so marked a degree of valvular and myocardial trouble as to forbid operation for the aneurism.

IV. This patient has profound anemia and purpura,[1] of rapidly progressive development. The patient, a vigorous Italian laborer of twenty-one, has complained for only two weeks of severe headache and sudden loss of sight in one eye. For the last few days he has been bleeding from the gums, and the blindness of the right eye proves to be due to a large retinal hemorrhage. For the last two days purpuric spots have been appearing on the left arm and the belly. The spleen is not enlarged and there are no enlarged lymph nodes.

The only blood examination yet made shows hemo-

[1] This case, which proved to be one of aplastic anemia, is reserved for fuller publication later, together with post-mortem findings.

globin 35%, reds 1,2000,000, whites 3,500. There is achromia and marked poikilocytosis, but no nucleated reds are found. A differential count of the white corpuscles gives polynuclears 12%, large lymphocytes 22%, small lymphocytes 66%. No eosinophiles. In the three days that the boy has been under observation, he has been rapidly losing ground.

V. The patient, a woman of thirty-seven, says that up to six weeks before entrance, she was well. At that time her throat began to swell and there was difficulty of speaking, with cough, dyspnea and great prostration. The most obvious thing about her at entrance was a greatly enlarged thyroid gland substantially as it is to-day. The enlargement is uniform, involving both the lobes. On the outer side of this on either side is a greatly enlarged lymph gland, the larger being on the right; both have increased rapidly since she entered the hospital. There is no exophthalmus nor Stelwag nor von Graefe's sign. No tumor. The heart is rapid, regular, full, without murmurs.

There is, as you see, great hoarseness and a crowing respiration, suggesting croup. A laryngological examination shows a tumor of the right arytenoid, encroaching on the glottis, which the throat department say is malignant. These extrinsic carcinomata of the larynx are particularly rapid of growth. The lymph node on the side of the tumor is the larger of the two. The propinquity of the thyroid to this growth makes it probable that the tumor of that organ is also a carcinoma, secondary to that of the arytenoid.

There is a slight dullness extending down the sternum and a little to either side of it, as far as the heart. This x-ray picture shows a shadow corresponding to this dull area, which is believed to be due to secondary involvement of mediastinal glands.

The liver is much enlarged and its lower edge, below the navel, is markedly lobular, one especially distinct lump, as big as a lemon, being felt at the outer edge. No axillary or inguinal glands are felt to be enlarged. The great dyspnea of the patient suggests the possibility of a sudden choking. In that case, intubation would be impossible, owing to the site of the primary growth and trachiotomy would be exceedingly difficult by reason of the great size of the thyroid. (The patient died, fortunately without asphyxiating.)

VI. The patient, a girl of twenty, had an attack of rheumatism, several years ago, without skin manifestations.

The present attack is one of acute joint inflammation, with loud presystolic and systolic mitral murmurs. From the beginning she has had a copious skin eruption, which, when first seen, was of a pale red color, not raised above the surface, not painful. The spots are very thick, especially on the back legs and buttocks, and took at first marked circular forms; gradually dark purpuric spots became mixed with them and finally the eruption became wholly purpuric. The case is of interest as showing the relations of both forms of skin eruption with rheumatism. Osler and several other writers have called attention to the interchangeability not only of the two eruptions, which we have here, but also of these with urticaria and angioneurotic odema. The patient has none of the gastro-intestinal symptoms which may accompany the erythemata and which often accompany the purpurias, urticarias and angioneurotic edemas.

I. A CASE OF OBSTETRICAL PARALYSIS IN A BABY EIGHT DAYS OLD. II. POST-DIPHTHERITIC INTESTINAL PARESIS.

BY C. M. GREEN, M.D.

I. The mother of the patient was admitted the day after delivery, suffering with pneumonia, from which she died four days later. Delivery was reported to have been effected with low forceps. The baby was well developed, weighing 8.25 lb. and had a cephalhematoma in the region of the posterior fontanelle; the left arm was completely paralyzed. The x-ray disclosed no gross lesions.

Many of these cases recover under the long use of massage, passive motion and, perhaps, electricity, with attention to general nutrition and the prevention of local atrophic changes from disuse. In the more serious and in the neglected cases, surgery now promises at least partial relief. Attention is called to a paper of Dr. Alfred S. Turner, of New York, on "Results from the Surgical Treatment of Brachial Birth Palsy," which appeared in the *Journal of the American Medical Association* for Jan. 12, 1907.

II. The patient is a young woman, with abdominal pain and distention, dullness in the flanks, and obstinate constipation. Five years before, in another hospital, an exploratory laparotomy was performed on account of abdominal pain; but nothing found to explain this symptom. The patient now declines to take ether, and without anesthesia nothing had been found to account for the symptoms, except the obvious intestinal paralysis. It would seem that this atony of the bowel is adequately explained by the history.

The woman was in the South Department in July, 1906, suffering with diphtheria. Seventeen days after entrance she began to have loss of power in hands and legs; she also had paralysis of the muscles of deglutition, and regurgitated liquids through the nose. At this time also she began to be troubled with constipation. Seven weeks later she was transferred to the Second Medical Service, where she was treated for four weeks for abdominal distention and constipation. She then passed four weeks in the Convalescent Home, whence she was sent back to the hospital and re-admitted to the Second Medical Service; the abdominal distention and constipation had grown worse. Here she remained three months; there was still some loss of power in hands and legs, but the paralysis of the muscles of deglutition had disappeared.

The case as now seen appears to be one of post-diphtheritic intestinal paralysis, and under treatment with high turpentine enemata, the distention has considerably diminished and the symptoms are somewhat relieved.

I. OCULAR INJURIES FROM DYNAMITE EXPLOSIONS. II. SYMPATHETIC OPHTHALMIA. III. CONJUNCTIVAL GRAFT FOR CORNEAL ULCER.

BY ALLEN GREENWOOD, M.D.

I. Three cases of ocular dynamite injuries, showing varying degrees of severity. The first case was injured Jan. 10, 1907, and now shows in the right eye a healed puncture wound of the sclera, just to the nasal side of the ciliary region, with good resulting vision. The left eye shows a fair vision after the removal of the traumatic cataract, which resulted from perforation of cornea and lens. The cataract was removed by suction and irrigation.

The second man was injured Jan. 22, 1907, and shows the left eye destroyed and shrunken. The right eye shows a central leucoma adherens, with light perception. In this eye an iridectomy may later restore some vision.

The third man was injured Feb. 18, 1907, and shows such extensive lacerations of both eyes that phthisis bulbi is the expected outcome, with complete and permanent blindness. These men, all Italian laborers,

were injured by driving the point of their picks into an unexploded dynamite cartridge.

II. This patient has been struck by flying glass, resulting in perforating injuries to both eyeballs. In both the injury involved the ciliary region. He entered the hospital Dec. 16, 1906, and was discharged Dec. 27, with both eyes quiet and having good vision. He was re-admitted Feb. 7, 1907, with both eyes showing a moderate irido-cyclitis, and it was found impossible to tell which eye was the offending one and which the sympathizing one. Both are improving under mydriatics, heavy doses of salicylates and inunctions of Hg.

III. A woman of forty was shown, who had developed three months before a progressive ulcer of the lower corneal margin. This had increased in spite of all treatment, until it involved one third of the circumference of the cornea and was about 4 mm. wide and half through the thickness of the cornea. A week before showing her, the ulcer had been curetted under ether and a flap of conjunctiva transplanted, so as to cover the whole of the ulcerated area. This conjunctival graft has become firmly attached to the previously denuded corneal area, and the eye is quiet and comfortable.

A CASE OF PERFORATION OF THE INTESTINE IN TYPHOID FEVER. OPERATION. RECOVERY.

BY F. B. LUND, M.D.

WM. A. L., aged thirty, was admitted to the service of Dr. John L. Ames, on Oct. 31, 1906. He had been ill at his home for four weeks, suffering chiefly from headache and vomiting. On entrance he had a temperature only slightly above normal, presented rose spots and was believed to be in the fourth week of a typhoid and beginning to convalesce.

During the night of Nov. 1, he had slight abdominal pain, so slight, however, that he did not summon the orderly on duty. At about 8 A. M., on Nov. 2, he was suddenly seized with very severe abdominal pain, he was seen by Dr. Ames at about nine, who found normal temperature, pulse 120, but of good quality, very marked muscular spasm and tenderness over the whole abdomen, especially marked in the right iliac region. The writer saw him in consultation with Dr. Ames about 9.30 A.M., which was within two hours of the time of the perforation. The diagnosis seemed plain, and on the patient's being informed that his bowel had sprung a leak, he was too only glad to let us try to close it.

Under ether an incision four inches long was made around the border of the right rectus. The cecum, which lay just beneath the incision, was found to be thick and reddened, having fibrin flakes upon its surface, but inspection disclosed no perforation. The lowest coil of the ileum, which is the best probable seat of perforation, was then found by running the forefinger around and beneath the cecum and hooking it up close to the ileo-cecal junction; the marked inflammation of this coil made it evident that the perforation was close by, and on looking at the under side a small plug of feces was seen projecting from a pinhole perforation. The wall of intestine about the ulcer was thick and stiff from inflammatory infiltration, but the ulcer was closed by two layers of continuous inverting sutures of catgut. The purulent and fecal contents of the pelvis were washed out with salt solution, and the entire abdomen was washed out, as the intestines, as far as could be seen, were all acutely inflamed. A cigarette drain, with a large rubber tube in the middle, was carried to the bottom of the pelvis, through the lower angle of the wound, and the remainder of the incision closed by through-and-through sutures of silkworm gut. The drain was so placed that in case the suture should give way, the leak would take place into its track. This proved a valuable safeguard three or four days later, when a fecal fistula became established. The patient was put to bed in a sitting position and so remained during convalescence. The temperature was normal after the operation and remained so. Infection of the wound resulted in some sloughing of the aponeurosis, and even in hemorrhage from the deep epigastric artery, but recovery was finally complete.

I. CASE OF BENIGN INDURATED ULCER OF THE PYLORUS SIMULATING MALIGNANCY OF OPERATION. EXCISION OF THE PYLORUS. DIVISION AND RE-SUPPLANTATION OF COMMON BILE DUCT. RECOVERY. II. CASE OF PYLORIC OBSTRUCTION DUE TO ULCER SCAR AND ADHESIONS. POSTERIOR GASTRO-ENTEROSTOMY. RECOVERY.

BY FRANKLIN W. WHITE, M.D.,
AND
F. B. LUND, M.D.

I. The patient, a carpenter, aged fifty, was first seen by Dr. White, on Nov. 7, 1906. He had had ocasional intervals of indigestion for the last twelve years. In the last six months the disturbance had been continuous and severe. His mother died of cancer of the breast. Previously used tobacco and beer to excess. His earlier trouble consisted of epigastric distress and soreness, both before and after meals, usually increased by eating. Much gas on stomach, occasional vomiting, constipation, no loss of weight. No history could be obtained, which definitely indicated a previous ulcer. His best weight was 150 lb. at the age of twenty-five.

In the last six months his digestive trouble has been more severe and steadily increased. He has had nausea and distress and pain in the epigastrium, coming usually after a meal, or in the night, relieved by copious vomiting, sometimes of one or two quarts of some liquid containing undigested food. His appetite was good and he was more thirsty than usual. In spite of some excess of liquids taken, he passed only 800–900 cc. of urine daily. This is explained by the frequent vomiting and the lessened amount of liquids which were able to pass the pylorus and reach the bowel, where absorption chiefly occurs. He was much troubled by eructations of gas and distress of the stomach. He was habitually constipated. He had lost between 10 and 15 lb. in the last six months and weighed 126 lb. at his first visit.

Patient was well developed, rather thin and pale. Nothing abnormal found in any organ except the stomach. The history so strongly suggested gastric stasis that a Boas test supper (cold meat, bread and butter, large cup of tea) was ordered and the patient reported fasting next morning. Fifteen hours after the test supper 150 cc. of residue was found in the stomach, containing large particles of undigested food. Free HCl, 16. Total acidity, 22. No lactic acid. Microscopic examination showed very abundant actively growing sarcinæ and yeast cells.

The lower border of the stomach on inflation was 2 or 3 cm. below the navel. No splashing was heard over the fasting stomach and there was no visible peristalsis.

Examination of the stools for blood by means of the guaiac test gave negative results.

The diagnosis of benign pyloric obstruction was made and treatment was begun by means of appropriate diet and stomach washing. Lavage was performed

daily at first, then two or three times a week. There promptly followed a marked lessening of distress and vomiting, and the patient gained 7 lb. in two weeks' time. The patient gained in strength, and the amount of urine increased to 1,000 cc. and the amount of residue in the fasting stomach was reduced to 60 cc. It was impossible, however, to get the stomach to entirely empty itself, even after the course of lavage and little setbacks, such as distress and vomiting occasionally occurring with slight indiscretions in diet, and as patient's circumstances made it difficult for him to carry out the treatment, and the medical treatment seemed likely to be very prolonged and the result incomplete, Dr. F. B. Lund was asked to see the patient. Operation was agreed upon, with a diagnosis of benign pyloric stenosis, and the expectation of performing a gastro-enterostomy for the relief of the mechanical obstruction.

The patient was operated upon Nov. 28, 1906, by Dr. Lund. A median epigastric incision showed marked dilatation of the stomach with hypertrophy of the pyloric group of glands on both the greater and lesser curvature, marked induration and thickening of the pylorus, apparently extending along the posterior wall as far as the beginning of the second portion of the duodenum. The condition had every appearance of carcinoma, and resection was decided upon, in spite of the extent of the duodenal involvement. The long clamps were placed so as to remove the pyloric third of the stomach, and after ligating the gastric and gastro-epiploic arteries, the gastro-hepatic and great omentum were divided, the stomach divided, the mucous membrane cauterized and the dissection carried on between the pylorus and the pancreas. The tumor was found firmly adherent here, and in separating the adhesions the portal vein was exposed and a small branch ligated close to it. In the first portion of the doudenum the common bile duct was found to have been divided, presenting as a thick muscular tube, with the bile coming from its end. It was divided behind the first portion of the duodenum. The duodenum was cut across at the junction of the first and second portions, the mucous membrane cauterized and the upper end inverted. A small slit was then made in the inner side of the duodenum. Three No. 1 catgut sutures with the needles in were tied into the end of the common duct, and the needles carried into the duodenum, through the opening made to puncture the wall at about one inch below the opening and one-quarter inch from one another. The threads were then drawn taut and tied, thus anchoring the duct in the duodenum. At the point of the entrance of the duct into the duodenum the former was sutured in the opening by four fine catgut sutures. Cholecystostomy was then performed, in order to relieve the junction of the flow of bile for a time. Posterior gastro-enterostomy was performed, uniting the first loop of the jejunum to the remainder of the stomach. A Murphy button was employed in order to save time. A gauze drain was carried down to the eroded surface of the pancreas, on account of slight oozing there, and the abdominal wound sutured. The patient bore the operation well and the next day was in fine condition. On removal of the gauze drain on the sixth day, there was a serious discharge, which persisted for several weeks. Examination showed the presence in it of neither gastric nor pancreatic ferments. The bile was discharged through the gall bladder for eight days. Then, on removal of the tube, the external discharge ceased almost immediately. At no time did bile disappear from the stools. The patient made a gradual recovery and left the hospital well on Jan. 18, 1907, weighing 136 lb. On Feb. 14, 1907, his weight was the same and his condition good.

The diagnosis, the results of medical treatment, the unusual operation, the simulation of malignancy at operation and the result are the features of interest in this case.

The diagnosis of gastric dilatation and stasis of food in the stomach was easy. The cause of the dilatation required further study. The story of the trouble was not the typical short history of cancer, with rapid loss of weight, and on the other hand, no history was obtained of a previous gastric ulcer, nor of inflammation about the gall bladder, which might cause adhesions. It is interesting to note how frequently the end results of gastric ulcer are found without any clear history of the original attack.

The presence of considerable free HCl in the fasting stomach showed that gastric secretion was good, though the amount of secretion resulting from irritation of the stagnating masses of food upon the gastric gland is often much greater in benign stenosis, giving a total acidity of 100 or over, due to HCl and acid products of fermentation. The presence of HCl in the fasting stomach and an acid fermentation due to yeast and sarcinæ is the rule in benign pyloric obstruction, due to ulcer scar adhesions and the like, and the exception in well developed gastric cancer. Out of 48 cases of gastric cancer seen by Dr. White, and in which careful records of stomach analysis were kept, there were 6 cases in which free HCl was found in the stomach contents, even after the disease was well developed. With one exception, these were proved to be cases in which the cancer developed upon an ulcer base. This observation that about one case in eight of well developed cancer of the stomach may have free HCl in the stomach contents agrees with the conclusions of Boas, Ewald and others, from a much greater experience.

In order to determine whether or not we were dealing with one of these exceptional cases of cancer, the stools were examined for traces of blood, after putting the patient for two days on a diet free from meat, fish and extracts. It has been shown that in well developed cancer of the stomach traces of blood are found with great constancy in the stools. Such examination of the stools should not be made until two days after the passage of a stomach tube to avoid confusing a spontaneous hemorrhage with a trace of blood possibly caused by intubation.

The diagnosis of benign pyloric obstruction was made, and since every case of gastric stasis represents a stomach in a stage of failing compensation, we attempted to restore this compensation by means of diet and lavage. The dietary treatment consisted in restricting liquids and giving five small meals a day to avoid distention of the stomach, and the use of brothy and pasty food, which could easily pass the pylorus, and rich in fat, so that it might contain sufficient calories. A good rule is to give food which will easily pass through a rather fine sieve (cream, butter, sweet oil, milk, gruels, raw egg, beef juice, meat, jellies, vegetables, purées, apple sauce, etc.).

Lavage of the fasting stomach was followed by the introduction of 100 cc. of warm sweet oil, which served the purpose of lessening pyloric spasm, of combating the hyperacidity and of increasing nutrition.

The good results of this treatment were seen promptly in a marked lessening of distress and vomiting, a gain in weight from 126 to 133 lb. within two weeks. The limitations of the treatment are also seen in the fact that it was not possible by means of it to get the stomach to empty itself completely. It is always desirable to faithfully carry out medical treatment in all cases of benign pyloric stenosis before resorting to operation, for two reasons. In some of the milder cases, especially those in which the elements of pyloric spasm is prominent, medical treatment may be all that is necessary. In the severer cases, it is often of great service in improving the general condition and thus preparing the patient for operation.

Simulation of malignancy in lesions or secondary glands may prove disturbing and subject the patient to a long, elaborate operation, when a shorter and simpler one would otherwise have been chosen. Examination of frozen section of doubtful tissue, by a pathologist, during the operation, may be of service, but even this is not always sure. This is the second case within a short time in this city, in the knowledge of the writers, when a benign condition of the stomach has been diagnosed and treated as malignant disease at operation. The immediate results in both cases were good, however.

II. The patient, a coachman, aged forty, was first seen by Dr. White, on Jan. 1, 1907. He has had stomach trouble for a year, which has become gradually worse. His family history is good and he remembers no previous illness, except measles in childhood. He has used beer and whiskey moderately and no tobacco. During the last year he was troubled with heartburn, epigastric distress or pain and nausea coming usually several hours after a meal and relieved by vomiting. The attacks of vomiting occurred at first at intervals of several weeks, became gradually more frequent and troublesome and now are of almost daily occurrence and often several times a day. The vomitus was described as watery and sour, sometimes containing lumps of food and recently as much as a quart in amount. Vomiting frequently occurred between 10 P.M. and morning, at a time when the stomach should normally be empty. He described his vomitus and stools as "black" on several occasions. He had much eructation of gas. His appetite was good at first, but recently poor and he was afraid to eat. His diet was formerly generous, but now consisted chiefly of milk, of which he took two quarts a day. He was very constipated, has lost much sleep and become very weak and short of breath. He had spent most of the time in bed for two weeks previous to seeing Dr. White. His weight a year previous was 145 lb. and on Jan. 1, 99 lb. He had sought medical advice several times in the last six months, but without improvement. He was referred to Dr. White as a case of cancer of the stomach, probably hopeless and too late for operation, and he certainly looked the part.

He was greatly emaciated, pale and weak. Nothing else abnormal was found outside the digestive tract. His teeth were good. The abdominal walls were very thin and lax. Splashing was obtained over a large area, extending two or three inches below the navel, and waves of peristalsis were seen passing over the greater part of the abdomen from left to right. On inflation the stomach was found to be greatly dilated and the lower border half way between the navel and pubes. The liver edge could be distinctly felt and was hard and slightly uneven.

The patient had eaten no breakfast on the morning of the first visit and only a very slight supper sixteen hours previous. A stomach tube was passed and 1,000 cc. of sour liquid, containing much food residue, was withdrawn, which foamed like beer and had the characteristic "sour bread" odor of the fermentation, due to sarcina and yeast. Free HCl, 40; total acidity, 89. Microscopic examination showed enormous quantities of sarcinæ and branching yeast plants.

The diagnosis of pyloric obstruction, probably of benign nature, was made and the treatment begun by appropriate diet and gastric lavage, with the object of cleaning up the stomach and improving the patient's condition before operation. Rectal enemata of water were given to relieve thirst. No great improvement was expected or obtained through medical treatment. The fasting stomach residue due to hypersecretion and stasis of food was never less than 600 cc. and was similar in character to that obtained on the first visit, always containing an abundance of free HCl and showing marked signs of fermentation. The guaiac test for blood was twice positive and twice negative in the stomach contents. The guaiac test for blood in the feces on a meat-free diet was once positive and three times negative.

Dr. F. B. Lund was asked to see the patient a week later and operation agreed upon. This was performed by Dr. Lund on Jan. 7. Through a right rectus incision a posterior gastro-enterostomy was done with the short loop according to Mayo's method. The pylorus and pyloric portion of the lesser curvature were greatly indurated and caught up to the under surface of the left lobe of the liver by adhesions exactly in the median line. The stomach was enormously dilated, and extended below the umbilicus on the left side of the body. Convalescence was complicated by a cough, and on the twelfth day after the removal of the stitches a loop of intestine was coughed out through the incision which required resuture.

The patient did not vomit after the operation, has gained steadily in weight and has practically no symptoms of digestive trouble.

The most interesting features of this case were the diagnosis and the result of operation.

The history of "black" vomitus and stools, the extreme emaciation and obvious pyloric obstruction suggested cancer of the stomach, but the invariable presence of plenty of HCl in the stomach contents made benign obstruction much more probable. The examination of the stomach contents and feces for blood were of much help in ruling out an exceptional cancer with good HCl secretion. The test was negative two out of four times in the stomach contents and three out of four times in the feces. These negative results are strong evidence against cancer, in which *constant* positive results are almost invariably found in a well developed case. *Occasional* positive results are not uncommon in marked cases of benign pyloric stenosis, as has been shown by Boas, Hartmann and White; the traces of blood are probably due to small erosions

or capillary hemorrhages, resulting from stasis and irritation of the mucosa.

It seems unfortunate that this patient should have consulted a considerable number of physicians, without obtaining an accurate diagnosis of his condition. This was, perhaps, due to the fact that the stomach tube had never been used as an aid.

There is a close analogy between the stethoscope and the stomach tube. We may be able to make a diagnosis of chronic disease of the thoracic organs without a stethoscope, but it is always a help and often a necessity, and we should never neglect its use. I think the same may be said of the tube in connection with chronic diseases of the stomach. The diagnosis of the patient's condition in the earlier stage would have been very easy with the use of the tube and perhaps difficult without it.

This patient adds one more to the long list of cases in which no clear history of an attack of gastric ulcer was obtained and yet the end results of ulcer were found at operation. The immediate results of operation encourage us to advise a gastro-enterostomy, even in very severe and advanced cases of non-malignant pyloric obstruction, as an operation in which the mortality is very low and the permanent results very good.

CASE OF NEUROSIS OF ESOPHAGUS.

BY FRANKLIN W. WHITE, M.D.

The patient is a machinist, aged thirty-seven, who has had great difficulty in swallowing his food for the past month. The family history is good. His only previous illness was typhoid twelve years ago and chronic constipation, his bowels moving only once or twice a week. His present symptoms are intense pain or distress when he tries to swallow food, beginning when the food enters the esophagus and getting more intense till it passes the "end of the breast bone." This is caused by all kinds of food, both liquid and solid, but is somewhat less with liquids. He frequently regurgitates or vomits food immediately after swallowing it and thinks he has seen blood streaks in the vomitus in the past week. His appetite is good, but he is afraid to eat and has limited his diet to milk and gruels for the last two weeks, and even this liquid food can be taken only a teaspoonful at a time and swallowed with great difficulty and distress. He has had severe frontal headaches and become very anxious about himself and has been in bed for the past two weeks. There has been little loss of weight, however.

He is well developed and nourished, rather pale and nervous, reflexes lively, abdomen diffusely sensitive; general examination otherwise negative, including the pharynx. He was given a glass of water to drink, and after swallowing a mouthful he doubled up in great distress, and soon regurgitated the water back into his mouth. An ordinary soft rubber stomach tube was then passed; this caused practically no pain or distress, but at a distance of about 40 cm. from the teeth (a position corresponding to the cardia) a firm, elastic resistance was met, which gave way suddenly on using moderate pressure and the tube passed into the stomach. Ninety-five cubic centimeters of the stomach contents was withdrawn, which was perfectly normal in character.

Examination of the regurgitated fluid for blood by means of the extremely delicate benzidin test (which shows the presence of blood in a dilution of one part in 100,000) gave a negative result.

At a second visit the patient drank a few swallows of water colored with methyl blue. The tube was passed till the resistance of the spasm of the cardia was met and the blue water withdrawn by aspiration. Then the resistance was overcome by gentle pressure of the tube, which was pushed into the stomach, and uncolored normal stomach contents was obtained.

The patient was examined with the x-ray and fluoroscope, while swallowing a Riedel meal (gruel and bismuth subnitrate). No esophageal pouch or appreciable dilation was found. A diagnosis of hyperesthesia of the esophagus and mild spastic stenosis of the cardia was made and was borne out by the results of treatment.

The treatment consisted in passing the soft stomach tube several times at a few days' interval and in encouraging the patient. Bromides were given for a short time and one or two teaspoonfuls of olive oil before each meal. The diet consisted of liquids and soft solids at first.

Improvement was rapid. The distress on swallowing and the regurgitation of food almost entirely disappeared at the end of a week and the patient went back to work. At the end of two weeks he was eating everything and practically free from symptoms, save for slight epigastric distress after meals.

The diagnosis of a purely functional disturbance, hyperesthesia and mild spasm of the esophagus was not difficult in this case. It is a condition which occasionally occurs in nervous or overworked persons and may be accompanied by a gastric neurosis.

The fact that all foods were equally difficult to swallow and the intense distress on swallowing a little water in comparison with the ease of passage of a stomach tube strongly suggested a neurosis. The fact that water could be partly swallowed and that no resistance was met on passing the tube until the end was 40 cm. from the teeth showed that the spasm was in the deeper part of the esophagus at the cardia, the most common location. The elastic feeling of the stricture and its sudden giving way to pressure left little doubt of its nature. Absence of the two swallowing sounds on listening with a stethoscope over the cardiac opening of the stomach is not considered a reliable sign of stenosis.

As cardiac spasm frequently accompanies an organic lesion great care is needed, in making the diagnosis of a pure neurosis, not to overlook a possible organic cause. There was no history of a cause of true stricture, such as a chronic ulcer, or swallowing of corrosive substances, and although the severe, cramp-like pain behind the sternum, which was so striking when the patient tried to swallow even liquids, suggested ulcer or erosion, the absence of pain in passing the stomach tube and the absence of blood in the regurgitated fluids, with the slight loss of weight, seemed enough to rule out both this rare condition and incipient cancer.

The absence of a pouch or diverticulum was shown by our ability to push the tube directly into the stomach after aspirating the contents of the esophagus. The above test, with methyl blue

water and stomach tube, is one of the simplest and best to distinguish between an esophageal pouch, or diverticulum, and a simple fusiform dilatation. In the first case, the tube cannot be pushed on into the stomach, and in the second it can.

The use of the x-ray after the patient has swallowed food containing bismuth is the most satisfactory means of determining the exact size and position of an esophageal pouch. The bismuth fills the pouch and outlines it with a clear shadow.

The duration of the trouble and the actual spasm of the esophagus were too mild in this case to cause more than a very slight widening of the esophagus above the spasm.

The good results of treatment were more prompt and lasting in this case than are usually to be expected in cases of esophageal neurosis, many of which are very stubborn and prolonged.

It is almost needless to say that the treatment of the patient's general condition by rest, hygiene, psychotherapy and narcotics is, if anything, more important than local treatment by tubes, bougies or dilators, and I have no doubt that the mental effect of the passage of a tube is fully as important in showing the patient that the passage into the stomach is easy and open, as the local effect in overcoming muscular spasm.

In a stubborn case the best treatment, in addition to the care of the mental and nervous condition, is the use of large bougies — size 58 or 60 French, or of Mixter's metal dilator, in which instrument metal beads of increasing size are pushed through the obstruction on a metal guide rod.

FRACTURED SKULL WITH EXTENSIVE DEFECT OF BONE.

BY J. BABST BLAKE, M.D.

A MAN, thirty-six years old, entered the hospital for treatment of external and internal hemorrhoids. Physical examination revealed the fact (which the patient did not mention) that an accident fifteen years ago had caused a compound comminuted fracture of the right side of the cranium, and that more than half the parietal bone and a part of the orbital plate of the frontal had been removed, leaving a non-tender, pulsating area, which is not noticeable on inspection, but obvious on palpation.

The City Hospital records, Sept. 15, 1891, state that the patient was brought in unconscious and covered with blood, an eight-pound pulley having fallen forty feet and struck him on the head. A large amount of bone was removed; the dura was torn; disorganized brain substance came away, and the hemorrhage was profuse. Bleeding points were ligated, the dura stretched loosely over the brain, the scalp sutured, and a dressing applied. He made an uninterrupted recovery, leaving the hospital in three weeks.

For three years afterward he was subject to epileptiform attacks of the following character: While walking, usually in the street, he would gradually become aware of a sensation of being followed by some one. This sensation increased, until he felt a desire to look backward over his right shoulder. The sensation became imperative, but the instant he turned his head and looked over his shoulder, he fell unconscious. The nature of the attacks seems to have been similar to those described in traumatic epilepsy.

At that time he was working, and doing active exercise in the gymnasium. It was suggested that such exercise might in some way favor the development of these attacks. He omitted the exercise, though continuing his work, and the attacks quickly disappeared, and have not returned. His only symptoms at present are dizziness if he bends forward, as in tying his shoe, a considerable limitation of the field of vision of the right eye, and a slight right-sided deafness.

This patient illustrates the reverse of the course of most cases of traumatic epilepsy. Usually the attacks continue after they are once established, and, as a rule, increase both in frequency and severity, unless, as occasionally happens, they are modified by treatment, operative or general in character. It is interesting to note that the large defect in the skull corresponds closely to the condition produced by the modern operation of decompression, and it is possible that the exceptional result is due, at least in part, to this fact.

I. CASE OF ANTHRAX OR MALIGNANT PUSTULE. II. TYPHOID FEVER WITH ACUTE CHOLECYSTITIS AND PERFORATION OF GALL BLADDER. III. FOREIGN BODY IN KNEE.

BY H. A. LOTHROP, M.D.

I. This man is forty-nine years of age; a teamster. He has much to do with the handling of leather, but otherwise there is nothing in his occupation which would expose him to this type of infection. His general health has always been good. On Dec. 1, he noticed what appeared to him to be a "pimple" on the right side of his neck. This gradually increased in size and became tender and painful. As a result he came to the hospital on Dec. 3.

Examination showed we had to deal with a man whose general health was good. He was complaining of moderate constitutional symptoms, such as would be consistent with the formation of a small abscess, which was causing some toxic absorption. An unusual factor, however, was the presence of excessive vomiting and thirst. Local examination showed on the right side of the neck a circular swelling, more or less circumscribed and about two inches in diameter. The surface was raised and its center was of a dark color. This darker center was surrounded by a zone of vesicles, most of which were intact. The portion of the induration toward the maxilla was sharply defined. The lower half presented no well-marked edge, but there extended down the neck in a broad zone, over the clavicle and on to the front of chest, a swollen, red and indurated area. The amount of tenderness was moderate. His pulse was about 110 and his temperature 102°. Infection from the bacillus anthracis was suspected at the outset. Cover slips were prepared from the darkened center of this inflamed area and the bacillus anthracis was demonstrated to be present. The skin in the vicinity was prepared in the usual way, with soap and water and 70% alcohol, up to the zone of vesicles. Great care was used not to break any of these, or to touch the darkened zone within this row of vesicles. The gauze used in the cleansing was allowed to touch the skin but once.

Operation. — An immediate operation was performed. A circular incision was made around this swelling, having a diameter of 2½ to 3 inches. No instrument was allowed to touch the central mass which was being excised except on its very periphery, and there were removed all tissues down to and including the deep cervical fascia, on which were discovered a few fibers

of the sterno-cleido-mastoid muscle. The hemorrhage was only moderate. Ninety-five per cent carbolic acid was applied directly to the wounds and rubbed into the tissues and its application was followed by 70% alcohol. The wounded surface was then packed with iodoform gauze, over which a protective dressing was applied. The subsequent dressings were similar. Patient has made an uninterrupted convalescence. His temperature was normal in three days and has remained so. There has been no septic absorption. An examination of blood at time of operation was negative, so far as the presence of bacilli was concerned. Examination of the specimen showed numerous bacilli in the tissues and in the vesicle fluid, but very few were present in the tissue in the vicinity of the cut edge. The injected bacilli were fatal to guinea pigs.

II. This man of thirty-nine years, was admitted to a medical service of the hospital, suffering from typhoid fever. His case was a mild typhoid fever, without complication and he was convalescing. At the end of four and a half weeks, about 10 P. M., one evening, he had sudden pain in the right hypochondrium and also pain referred to right shoulder. There had been no previous complaints referred to this hypochondrium. An intestinal perforation was suspected. I saw him about 11 A.M. on the following morning. At that time his symptoms had largely subsided and he was comparatively confortable. His pulse was about 110 and his temperature 101°. The abdomen was not distended. There was moderate muscular spasm referred particularly to the right half of the abdomen, and the tenderness was more marked in the right lower quadrant. An intestinal perforation was suspected, but, in that his condition had improved so much in the last few hours, interference was deferred. In the course of the afternoon, however, he complained more of pain in right lower quadrant and the muscular spasm was more marked. His general appearance was less favorable. In view of his condition, an operation was decided upon.

Operation. — A median incision was made extending from the umbilicus to the pubes. On opening the abdomen, there appeared a slightly turbid fluid in considerable quantity, which was of a yellowish color, obviously stained with bile. The small intestine was examined rapidly, beginning at the lower end of the ileum. The indurated areas characteristic of typhoid ulcers were discovered in the lower end and there were patches of white exudate on the intestine, showing the presence of a moderate degree of peritonitis. No perforation of the intestine was discovered. The hand, passed through this wound to the right hypochondrium, showed the presence of adhesions about the gall bladder. It became obvious that the site of the trouble was here. The original incision was closed rapidly and a vertical incision through the right rectus muscle so as to expose the gall-bladder region was made. Without difficulty, a perforation, ¼ of an inch in diameter, was discovered on the under side of the neck of the gall bladder, through which was escaping a thick, creamy pus. This perforation was closed and the edges inverted by means of Lembert sutures. The fundus of the gall bladder was then opened and a drainage tube inserted and sewed in place. The second abdominal incision was then closed, leaving sufficient room for drainage.

The shock following this operation was not excessive and his convalescence has been uninterrupted. As you will observe, the wounds are healed, except for a small opening which marks the site of drainage, from which escapes a very moderate amount of bile. Patient is now gaining weight rapidly and suffers no particular discomfort. The fistula will probably close very shortly. Looking back over the history of this case I feel convinced that a more careful consideration of his signs and symptoms, just prior to operation, would at least have given rise to the suspicion of the presence of an acute cholecystitis with perforation.

III. This patient is a boy of seven years, who entered the hospital about ten weeks ago. Examination showed an acute synovitis of the right knee. There was no particular history at time of entrance, which would suggest a cause for the inflammation. He had a temperature of 102°, which became normal in the course of two or three days. The moderate amount of fluid which had been present was gone by the end of a week. Two x-ray pictures were taken, but he was discharged from the hospital before these were obtained. He returned to the out-patient department still complaining of discomfort in the knee and a moderate amount of fluid had reappeared. Examination of the x-ray pictures showed a foreign body in the joint and it appeared to be a broken needle. It was then learned from the mother that the boy might have fallen on a pin, such as is used in connection with phonographs. The picture showed the foreign body situated on the inner side of the knee, about equidistant from the articular surfaces of the tibia and femur, in the immediate vicinity of the internal semilunar cartilage. It was well toward the center of the joint.

Operation. — A slightly curved incision was made, more or less parallel to the direction of the fibers of the vastus internus muscle, and the inner aspect of the capsule exposed. No tourniquet was used. By means of a curved incision just anterior to the internal lateral ligament of the joint the capsule was opened above the internal semilunar cartilage. A careful search in all parts which could be exposed by this incision failed to reveal the presence of any needle. A moderate amount of clear fluid escaped from the joint. The capsular incision was then prolonged moderately and the joint approached just below the internal semilunar cartilage. The needle was then discovered situated below this cartilage and about half buried in the center of the hyaline cartilage of the tibia. The cartilage was a little eroded, so that the needle was in a small cavity and one end projected into the joint so as to be rubbed by every movement at the knee. It was about ½ inch long and undoubtedly was a fragment of a phonograph pin. The wound in the capsule and the skin incision were closed and the leg fixed by means of a splint. It is now three weeks since operation. Healing was by first intention and the convalescence was uninterrupted. He will wear fixation apparatus about one week longer and then will be allowed to move the joint carefully.

DIFFUSE PERITONITIS; DRAINAGE; INTESTINAL PARALYSIS, SECONDARY ENTEROSTOMY, WITH RELIEF OF SYMPTOMS.

BY DAVID CHEEVER, M.D.

Esther C., seven years of age, admitted to the Boston City Hospital, Dec. 8, 1906. No history of previous attacks of appendicitis. Present illness of two days' duration, pain at first in the epigastrium, later in the lower abdomen, constant vomiting, constipation.

Physical examination showed a little girl in fair general condition, with a moderately distended abdomen, extremely tender below the umbilicus and to the right. There was but little involuntary muscular spasm, no mass and but little, if any, demonstrable dullness in the flanks.

Laparotomy was immediately performed under ether anesthesia. Upon opening the peritoneum

through the right rectus muscle free pus exuded from among the coils of reddened, congested intestines. The pus was wiped out as fast as it appeared. Cautious examination with the finger showed the entire absence of limiting adhesions. The appendix was found lying over the pelvic brim, the tip necrotic and perforated. The right lower quadrant and the pelvis were bathed in thin pus, which was sponged out as completely as possible. Careful exploration led to the conviction that the process did not extend far into the left lower quadrant or above the umbilicus. The pelvis and right iliac fossa were drained with rubber tubes, wrapped in gauze and rubber tissue.

After operation the temperature fell to normal, but the general condition failed to show corresponding improvement. Vomiting persisted and approached fecal in character, distention and tympany increased, and all measures to cause the passage of gas and feces failed. Exploration of the wound and removal of the wicks showed a satisfactory local condition and no mechanical error in the operative technique to account for the obstruction. There seemed practically no doubt that death would soon occur. Forty-eight hours after the operation, primary ether anesthesia was induced in the ward, the abdomen opened in the left linea semilunaris and a distended coil of ileum drawn out, secured to the skin by one suture and freely opened. The escape of a considerable amount of fecal matter and gas was materially aided by abdominal pressure. The patient's condition did not justify any attempt at exploration through the new incision, nor more elaborate suture of the intestine to the peritoneum, and the operation was undertaken solely for the relief of symptoms by making an artificial anus, rather than for the determination of the cause of the obstruction.

The patient has finally made a complete recovery so far as the peritonitis is concerned. For many days a free discharge of pus persisted through the original incision, from the region of the lower abdomen and pelvis, and there were several attacks of transient vomiting, with the presence of acetone in the urine. The incision is now completely closed. For ten days all fecal matter passed by the artificial anus; on the eleventh day gas and fecal matter passed in small amounts by rectum. At present there is a small amount of fecal discharge from the artificial anus and formed movements by rectum. There is no probability of the spontaneous closure of the fistula, as it is a muco-cutaneous one, but the good general condition of the patient justifies the hope that the restoration of the continuity of the intestine is merely a question of operative technique.

The writer believes that this is one of a class of cases which are sometimes erroneously reported as cases of general peritonitis. Such instances have come under his observation, and it seems improbable that the very much higher percentage of recoveries reported by some observers than is the experience of others should be entirely due to perfection of technique. When the opening of the peritoneum discloses free pus bathing the coils of presenting intestines, and the examining finger finds no limiting adhesions anywhere, it is easy to mistake a diffuse, spreading, but still localized, infection for a general one. There may exist a confusion in the definition of terms: a general peritonitis may be said to be one which involves the whole greater peritoneal cavity; anything of less extent may be called a diffuse process. It seems reasonable to exclude from the definition the lesser peritoneal cavity, since its involvement in any peritoneal inflammation is uncommon and when present is a negligible factor except in certain cases of direct infection, as by perforation of a gastric ulcer, or by a gunshot wound. The writer has not been so fortunate as to have under his personal observation any case of recovery from an actually demonstrated general peritonitis, but a considerable number of cases are reported and they will, doubtless, increase with improvement in technique.

Stoppage of the intestinal current is one of the most common and serious of the complications of peritonitis. Any of the mechanical causes of obstruction may be present, but there is a large class of cases where it can be ascribed only to a simple cessation of peristalsis, due to toxic paralysis, as in the case reported above, where the subsequent course of events ruled out with reasonable certainty any other cause. It is precisely in this kind of a case as other surgeons have pointed out, that the scale may be turned by a simple enterostomy, which lessens or prevents the exhaustion of vomiting, conserves the strength and perhaps permits of nutrition until the infection may be overcome.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

THIRTY-SECOND ANNUAL MEETING, HELD AT WASHINGTON, D. C., MAY 7, 8 AND 9, 1907, IN CONJUNCTION WITH THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

(Concluded from No. 9, p. 300.)

THE COMPARATIVE ADVANTAGES OF CATGUT AND SILVER WIRE SUTURES FOR CLOSING THE FASCIA AFTER ABDOMINAL INCISIONS.

DR. HUNTER ROBB, of Cleveland, Ohio, said the ideal suture material should be smooth, pliable, but not brittle, not too costly, easy to obtain on short notice, and above all readily rendered completely sterile. Catgut would be an almost ideal material, but when we sterilize it, short of rendering it brittle, and consequently useless, some few of the inner strands may not be absolutely aseptic; and, in fact, not a few cases of suppuration and even death have been directly traceable to the use of catgut ligatures. The cumol method probably gave the best results, but for the past few years he had had excellent results with the ordinary and chromicized catgut as prepared by Van Horn, of New York, especially when the smaller sizes were used. When, however, the larger sizes of chromicized catgut were employed, the sutures were not always absorbed, but frequently gradually worked their way to the surface of the wound and were then discharged. They were not always sterile. Bacteriological tests made in his service had shown that the knots and end of catgut sutures, even when the wound had healed by first intention, teemed with bacteria, and he felt sure that chromicized catgut was responsible for many of the skin infections encountered.

In one case of phlebitis following an amputation of the cervix in which chromicized catgut, was used, he was inclined to attribute this complication to the suture material.

He now preferred to use for the skin and peritoneum small sizes of sterilized catgut, but for the fascia he believed that silver wire offered advantages over the larger sizes of plain or chromicized catgut. These results had been deduced from recent experience and largely also from an analysis of two series of 100 cases each in which silver wire and chromicized catgut respectively were used in bringing together the deep fascia. This analysis showed that the relative incidence of infection in the deep fascia occurring after the use of catgut and silver wire respectively was as two to one. Moreover, it was noted that when suppuration occurred, it was always larger in amount and extent in the catgut cases than in the infections met with after the use of silver wire. The main objection against the use of silver wire for bringing the fascia together was, that one left in the wound a substance that might annoy the patient by sticking into the surrounding tissues. This trouble, however, could be readily averted if the suture was properly applied and the ends were turned over with a pair of thin-jawed hemostatic forceps, so that they form a ball-like end to the suture. This annoyance had to be remedied in only four out of four hundred of the silver wire sutures. Removal under cocaine was always easy and painless.

So far as the occurrence of hernia was concerned, *a priori*, this accident should be less likely to occur after the use of silver wire, as this material undoubtedly approximated the tissues for a greater length of time, and in his experience had given rise to suppuration less often. Hernia was not noted in a single case in either series, but the separation of the fascia and muscle often did not take place within the first few weeks after operation, and yet sometimes if these patients were examined some months or a year afterwards, a smaller or larger protrusion would sometimes be apparent. He had not infrequently noted such an occurrence in patients who had been operated upon by other men, and he had no doubt that others had met with the same thing in some of his cases. Consequently, so far as hernia was concerned, he did not believe that we should judge of the relative value of the suture material except in cases examined at an interval of six months or a year after operation.

Dr. Leroy Broun, of New York, said it was his custom, in closing a wound, to bring together the fascial edges with chromicized catgut. He did not rely on this entirely, but introduced, at the same time, some safety sutures of silkworm-gut at about an inch and a half apart, and he saw that these were kept in for at least two weeks, to guard against the opening of the wound by coughing, a sudden jar, or sneezing.

THE USE OF LAXATIVES IN THE AFTER-TREATMENT OF LAPAROTOMY.

Dr. Henry T. Byford, of Chicago, said that some laparotomies were of such a simple nature that the functions of the abdominal viscera were not materially disturbed thereby, and need not be disturbed afterwards by medicine. Exploratory peritoneal section, and the removal of non-adherent ovaries, were apt to be of this nature. But the majority of laparotomies represented a different problem. When there had been considerable trauma during the operation, with consequent soreness and inability to endure the pains, he applied an ice-bag to the abdomen rather than give opiates. The ice-bag and an enema containing 30 gr. of chloral would usually alleviate the pain and nervousness and sometimes the nausea, without inhibiting peristalsis. If his only object were to save life he should not bother the patients with the laxatives unless abraded or injured tissues had been left to form adhesions; but he confessed, at the risk of being considered meddlesome, that he gave laxatives in all but the simplest cases, because in those who did not really need them the bowels were more quickly relieved of the gas, and the patient then felt much better than when not so treated. Patients who had undergone a previous laparotomy generally remarked, without being asked, that they were having a much more comfortable convalescence than after the previous one in which they had either taken no laxatives, or had taken opiates for the pains.

CARE OF STOMACH AND BOWELS; POSITION AND REST IN BED.

Dr. Lapthorn Smith, of Montreal, did not allow anything whatever to go into the stomach of a patient during the first twenty-four hours. The bowels were moved by enema on the third day and every day after unless they moved naturally. If there was vomiting, calomel was used generally with bicarbonate of soda. Position depended on the severity of the cases. In hemorrhagic cases the foot of the bed was raised; or in septic cases, especially after appendicitis, the head was raised. Rest in bed for three weeks was the safest so as to improve digestion and nutrition. Twenty-one days after operation the patient was allowed to get up and to begin gentle exercise, so that by twenty-eight days she could walk about freely.

ESERINE SALICYLATE AS A PROPHYLACTIC AGAINST ATONY OF THE BOWELS.

Dr. Hiram N. Vineberg, of New York, referred to the use of this agent, saying it had a beneficial effect when given to a patient before coming out of anesthesia. It was given in doses of one-fortieth of a grain. It was the custom to give $\frac{1}{4}$ or $\frac{1}{2}$ of a grain of morphine with one-fortieth of a grain of salicylate of eserine. He thought there was less distention of the abdomen after the use of eserine in this manner.

THE INCISION AND AFTER-TREATMENT.

Dr. W. Gill Wylie, of New York, said the location of the incision varied with the internal condition. The method of closure varied according to the site of the incision. Method also varied with the condition of the bowels due to preliminary preparation.

THE AFTER-CARE OF THE PATIENT.

Dr. Herman J. Boldt, of New York, said that mobility of the patients was begun as early as was consistent with the patient's general condition. The greater number of patients might be out of bed with advantage to them within three days. A large number, even those upon whom extensive and technically difficult operations had been done, might be out of bed and placed in a comfortable chair within from twenty-four to thirty-six hours after the operation. A properly adjusted plaster bandage, adhesive, was essential for the safety of the wound. Neither the stomach nor the bowels required any special consideration unless there was some particular indication for it.

THE AFTER-CARE OF THE PATIENT.

Dr. J. Montgomery Baldy, of Philadelphia, said that rest in bed, good hygiene, diet and nursing were the principal factors in the end results. Moderate early getting up after operations was all right for patients in good general condition, but it was bad for others. There was nothing to recommend getting up in twenty-four or forty-eight hours. There was nothing to be gained, but much to be lost. That prolonged stay in bed increased the frequency of embolism and thrombosis was not true. He would admit that a surgical case might be gotten out of bed and home in

a week or ten days, but he denied that this was best for the patient, or that this meant that convalescence had been more rapid. The aim should not be to get patients home in the quickest possible time, but to give them the best amount of stored-up health and energy with which to successfully meet the future. One who had gotten out of bed with health fully restored was surely more competent to meet the necessities of every-day resistance than one who had been quickly put upon his feet with little regard to his general condition.

THE PROPHYLAXIS OF VENEREAL DISEASE FROM THE STANDPOINT OF THE GYNECOLOGIST.

The President, DR. CLEMENT CLEVELAND, of New York, selected this subject for his address. He said the position of the gynecologist regarding venereal disease was one of greater enlightenment than that of his brother of the general profession, because of his greater opportunity for observing it. His responsibility was, therefore, proportionately greater. From gynecology had come all the present day knowledge of the effects of gonorrhea in women, and the inspiration for all that was known of its lasting effects upon men. The responsibility of enlightening the public did not rest with the medical profession alone. It was not a medical or sanitary problem merely, as the causes were dependent upon social conditions beyond control of the physician. By constant study and agitation the best methods for reaching the people would be evolved. All medical schools should pay the greatest attention to instruction in venereal diseases and their consequences, and some were doing so. The student and physician could not be too often reminded of the responsibility that rested upon them, not only in the treatment of these diseases, but as regards prognosis, and sanction of marriage. Many thousands of young men with a gonorrhea uncured marry, and with the sanction of their physicians, who had not been as careful as they should have been in giving approval. For himself, he was positively convinced that the gynecologist should not play over the surface of the subject, but should get right down to the foundation of the matter and display it in all its ugliness. In this way only could there be any hope of making influence felt and expect to reach any moral advancement.

To overcome indifference and arouse an urgent public sentiment in favor of the movement, there was no more powerful argument than the fact that the greatest sufferers from these diseases were innocent women and children. Constant preaching of this one fact alone would gain more supporters for the cause than all others combined.

In closing, Dr. Cleveland thought it would be well to have a standing committee to report each year, to arrange for papers in symposium, to invite prominent men to read papers before the society, or in other ways to make prominent the vital interest that was felt. By so doing gynecologists would acquit themselves of any charge of inactivity, and at the same time have the satisfaction of feeling that they were doing their share in helping on the good work.

WORK OF HENRY GARRIGUES APPRECIATED.

DR. BROOKS H. WELLS, of New York, delivered an oration on Dr. Garrigues in appreciation of his work in introducing asepsis into obstetric practice in America.

The Association held a joint session with the American Association of Genito-urinary Surgeons, at which there was discussed "The Surgery of the Kidney."

SURGERY OF THE KIDNEY.

DR. GEORGE S. HUNTINGTON, of New York, pointed out by means of numerous lantern slides some of the congenital variations of the kidneys and ureters in reference to their development and surgical importance.

DR. LEWIS GREGORY COLE, of New York, followed with remarks on the radiographic diagnosis of renal lesions. His talk was accompanied by the projection of numerous lantern slides on the screen.

DR. CHARLES H. CHETWOOD, of New York, exhibited specimens, and presented illustrations of renal lithiasis, of pyonephrotic stone kidney, and of renal tuberculosis.

DR. FRANCIS S. WATSON, of Boston, presented the subject of calculous anuria, with especial reference to bilateral renal calculus, and to the simultaneous performance of bilateral nephrolithotomy in those cases, and to calculous anuria occurring in patients having but one kidney.

DR. HOWARD A. KELLY, of Baltimore, discussed the value and method of mensuration in vesical, ureteral, and renal work.

DR. GEORGE E. BREWER, of New York, considered the pathology, diagnosis and treatment of acute unilateral septic infarcts of the kidney; while Dr. GEORGE M. EDEBOHLS, of New York, pointed out some of the requirements of up-to-date nephrectomy.

The last session of the society was a joint one with the American Ophthalmological Society, at which the prophylactic and curative treatment of ophthalmia neonatorum was discussed.

THE PROPHYLACTIC AND CURATIVE TREATMENT OF OPHTHALMIA NEONATORUM.

DR. EDWIN B. CRAGIN, of New York, described some experiments and tests that had been made, and from these he said it was evident that in the solutions usually employed, argyrol had practically no bactericidal power over the streptococcus or staphylococcus, but with the gonococcus in strengths of 20% and 30% it was perfectly efficient. These tests also showed why the results with the 10% argyrol were not as good as with the 20% argyrol. So long as a 20% argyrol solution was efficiently bactericidal with the gonococcus in thirty seconds, so long as the gonococcus was the coccus most feared in the etiology of ophthalmia neonatorum, and so long as the clinical results were practically as good as with the use of 2% nitrate of silver, and better than with the 1% nitrate of silver, and this without the annoyance of silver irritation and staining, he felt justified in using and advocating the use of argyrol as a prophylactic against ophthalmia neonatorum.

In the curative treatment of ophthalmia neonatorum the writer had also found argyrol of great value. The absence of irritation in strong solutions, the fact that these solutions might be dropped into the eye at short intervals by the nurse without injury to the eye, and the fact that these solutions were bactericidal to the gonococcus — all these facts were in its favor, and the writer's present plan of treatment consisted of frequent irrigations of the eye with boric acid solution, every fifteen to twenty minutes during the stage of active purulent discharge, cold compresses, and the instillation of argyrol, 30% every two to four hours.

Since the completion of the bactericidal tests referred to, the writer felt that in spite of its many good qualities, argyrol left much to be desired in the treatment of ophthalmia when due to the streptococcus or staphylococcus. Some of the worst cases of ophthalmia were due to streptococcus infection, and it was hoped that in the near future a silver compound might be found which would possess the blandness of argyrol and be as germicidal to the streptococcus and the staphylococcus as was argyrol to the gonococcus. In the meantime, it seemed wise in severe cases of ophthalmia

neonatorum, which resisted the treatment by argyrol, boric irrigations and cold compresses, to make occasional use of nitrate of silver, 1% to 2% solution.

DR. LUCIEN HOWE, of Buffalo, N. Y., favored the use of nitrate of silver in 2% solution in cases of ophthalmia neonatorum. He discussed the subject from three distinct standpoints, namely, as it affects the physician, midwives, and as it affects the public. He said the percentage of blindness from ophthalmia neonatorum was greater in the rural districts, and not in the cities, where one would expect to find it.

DR. LAPTHORN SMITH, of Montreal, said that of over 1,500 obstetric cases he had had a little less than 10 instances of ophthalmia neonatorum. Whenever there was any sign of ophthalmia, he began with a 1% solution of nitrate of silver, and if in two days there was no improvement in the condition of the eyes, he increased to 2% two or three times a day. In one or two cases he had gone up to 5%.

DR. WALTER P. MANTON, of Detroit, said they had been using nitrate of silver in the Detroit Woman's Hospital for many years, 2 % solution, and they rarely ever get any catarrh reaction. They had not obtained as good results as Dr. Cragin had reported, however, from the use of argyrol in 20% to 25% solution.

The paper of Dr. Cragin was further discussed by Drs. H. Park Lewis, Walter M. Green, Henry D. Fry, Alvin A. Hubbell, Seth C. Gordon, and the discussion closed by Dr. Cragin.

CYSTIC LYMPHANGIOMA OF THE GASTRO-COLIC OMENTUM.

DR. W. FRANCIS B. WAKEFIELD, of San Francisco, reported the case of a four-year-old boy, who was brought to Dr. S. J. Hunkin, with an enormously distended abdomen. He presented no other symptoms. For at least two years the child's abdomen had been noticed to be progressively increasing in size. Laparotomy was advised. Dr. Wakefield was invited to operate, and saw the child for the first time on the operating table. Abdominal section disclosed a multiple cystoma larger than an adult head, which was broadly attached to the greater curvature of the stomach, spreading out over a small portion of the anterior and a greater portion of the posterior wall. Its attachment to the stomach was so firm that it could not be separated therefrom without danger of injury to that viscus, and it was therefore cut away as close as possible to the stomach wall. No gross pathologic change could be observed in the wall of the stomach, the cystoma having simply plastered itself over its surface. The leaf of the gastro-colic omentum, which passes from the stomach to the transverse colon, was absent, although the ordinary omental apron spread itself downward from the transverse colon over the small intestines. It seemed clear, then, after the tumor had been delivered through the abdominal incision, and the operator found himself able to look directly down upon the pancreas, that he was dealing with a cystic tumor originating in and displacing the upper reflection of the gastro-colic omentum, and that the tumor, early in its career, as it developed between the omental folds, had, by simple contiguity, spread itself over and become attached to a somewhat broad area of the stomach wall. A small cystic mass about the size of a hen's egg was found loosely attached to the head of the pancreas, and a still smaller one, about the size of an English walnut, was found attached to the serous coat of the stomach, some distance from the main tumor.

The tumor was larger than a man's head, and consisted of a number of various-sized, thin and clear-walled cyst chambers. The central portion of the neoplasm was occupied by a single cavity which made up the bulk of the cystic mass. Surrounding this central cavity on all sides were numerous smaller cystoid masses ranging in size from that of an orange to that of a pea. The walls of all the cyst chambers were thin, easily ruptured, smooth, shiny, and in general appearance resembled the omentum. The component layers of the cyst walls could not be separated. The inner walls of the cyst cavities were in many places covered by somewhat adherent, gelatinous masses, which to the feel were distinctly granular. The fluid contained within the cavities of the cystoma was clear, straw-colored, neutral in reaction to litmus, and coagulated into a solid mass on heating with a drop of acetic acid. In some of the chambers the fluid was mixed with fine crystals, oily to the touch, and microscopically identical with cholesterin. In others the presence of blood was indicated, macroscopically by imparting a dark color to the fluid, and microscopically by the presence of red cells. The cystic fluid everywhere contained leucocytes.

The author gave a detailed report of the histological examination of the walls of the cystoma.

ECTOPIC GESTATION WITH SPECIAL REFERENCE TO THE TREATMENT OF TUBAL RUPTURE.

DR. HUNTER ROBB, of Cleveland, Ohio, gave a brief review of the course of an ectopic gestation, also of the opinions of various authorities as to the treatment to be adopted in emergencies due to tubal rupture; as the patient rarely died from the hemorrhage, but more often from shock, as a rule it was better not to operate until reaction had taken place. Records of several cases treated in this way and also of experimental hemorrhages produced by cutting the ovarian and uterine arteries in bitches were given.

INCISION OF THE ANTERIOR UTERINE WALL AS THE TREATMENT OF CHRONIC INVERSION OF THE UTERUS.

DR. REUBEN PETERSON, of Ann Arbor, Mich., said that all efforts at reposition of a chronically inverted uterus must be directed towards dilating and incising the unyielding cervical ring. Pressure methods were relegated to the past. Proper treatment was operative from the start. The constricted cervical ring could be incised from above or below. The abdominal route was no easier and did not give as good results as the incision from below. The uterine wall might be incised anteriorly or posteriorly. The former was preferable. He cited a case of twelve years' standing which was successfully treated by this method, and described in detail the operative technique.

DR. I. S. STONE, of Washington, D. C., presented a study of the utero-sacral ligaments from the standpoint of their utility as uterine supports.

POST-OPERATIVE INVERSION OF THE VAGINA; A PRESUMABLY NEW OPERATION FOR ITS CURE.

DR. PHILANDER A. HARRIS, of Paterson, N. J., said that access to the field of operation was made through a suprapubic median line abdominal incision. The round ligaments were sought and dissected from their imbedments. The vagina was well pushed upward with a staff. A small hole was cut in the vagina upon its right side, and another opposite upon its left. The mucous membrane of the fundus of the vagina between and about these penetrations was curretted. The right ligament was drawn through the apertures near the top of the vagina from right to left. The left ligament was then drawn through the apertures of the vagina from left to right. The distal end of each ligament was then drawn taut, and sewed as high as possible with catgut to the larger portion of its fellow. After sewing the distal portion of each ligament to the proximal

portion of the other ligament, the through-and-through sewing was continued at the fundus of the vagina in such a manner as to repeatedly penetrate the ligaments which it covered.

OFFICERS.

The following officers were elected: President, Dr. J. Montgomery Baldy, of Philadelphia, Pa.; Vice-Presidents, Dr. I. S. Stone, of Washington, D. C., and Dr. Malcolm McLean, of New York; Treasurer, Dr. Chas. P. Noble, of Philadelphia, Pa.; Secretary, Dr. J. Riddle Goffe, of New York. Member of the Council, Dr. Clement Cleveland, of New York.

Philadelphia was selected as the place for holding the next annual meeting, in 1908.

Book Review.

Clinical Diagnosis. A textbook of clinical microscopy and clinical chemistry for medical students, laboratory workers and practitioners of medicine. By CHARLES PHILLIPS EMERSON, A.B., M.D., Resident Physician, the Johns Hopkins Hospital; Associate in Medicine, Johns Hopkins University. Philadelphia and London: J. B. Lippincott Co. 1906.

This volume furnishes abundant evidence, if evidence were needed, of the great amount of work that has been accomplished in the clinical laboratories of the Johns Hopkins Hospital. Here will be found collected and collated a great number of carefully observed facts. In addition to the author's personal experience he utilized in the preparation of this book the clinical records of the hospital since its opening in 1889. For a number of years Dr. Emerson was the director of the Clinical Laboratory and had charge of the systematic course in clinical microscopy which, since the foundation of the Johns Hopkins Medical School, has held an important place among the studies of the third year students. It was the first well-equipped clinical laboratory established for teaching purposes and providing ample accommodation for a large class of students. It was built near the wards and was independent of the laboratories of chemistry or pathology. Without doubt the conception of this laboratory originated with Dr. Osler. The first instructor to be placed in charge was Dr. Thomas B. Futcher, who as early as 1896–97 gave an excellent systematic course in laboratory methods of clinical application. To Dr. Futcher is due the credit of developing this new department in clinical teaching. His efficient work was extended and amplified by Dr. Emerson.

As the author states in the preface the subject is presented from the clinical rather than the laboratory point of view.

That data of great value have been collected can be readily understood when it is known that eighty microscopes in the hands of trained students were used in the examination of eighty specimens of a single patient's blood or sputum. The most interesting findings were drawn by an artist who was always within call.

There is an admirable introduction by Dr. Osler. We wish his wise words might sink into the minds of all clinical teachers. "In medical education the all-important problem is to give a man the knowledge he can use. In our modern system much of the training is rendered ineffective, as it has not been sufficiently prolonged to become part of a man's intellectual or bodily mechanism. A brief course of six weeks on any practical subject is almost useless and in some may be positively dangerous." In his closing paragraph he says, "But the aim of a training such as this book implies is to send out into practice men able to give patients the benefit of modern scientific methods in the diagnosis and treatment of disease — men who use the microscope, who examine sputum and who use the stethoscope, and who can do the routine urine and blood work with confidence."

The book contains a great deal of original material such as is usually published in monographs or journals. As examples may be cited a study of the excretion of sodium chloride in the urine of pneumonia patients, the sputum in chronic bronchitis, the accurate determination of hemoglobin in a large number of healthy persons, and many blood counts.

The first section deals with the sputum, and it is the best we have seen in any treatise on clinical diagnosis. As the author says, the proper examination of the sputum is fast becoming a lost art. To many a student of the present day it simply means a search for tubercle bacilli. He does not know "that our fathers who never saw a germ could still diagnose and follow cases with an acuity with which he usually does not credit them."

Over 200 pages are devoted to the urine. The chemical study as well as the microscopical is well presented. We are pleased to note that Arnold's modification of Volhard's (misspelled Volhardt) method for the quantitative determination of the chlorides is given. The procedure, although used by the leading clinical chemists, has not found its way into the standard textbooks. The section on the feces is less complete than that on the urine.

The portion of the book dealing with the blood is especially rich in original matter. The importance of accuracy in clinical hematology is emphasized. The Gowers, Dare, Sahli and other hemoglobinometers used in the hospital are standardized against a new Miescher, which is more accurate. The author hopes that the present reactions against the Tallqvist scale will lead practitioners to adopt some instrument requiring less guess work.

The text is illustrated by a large number of splendid original drawings that will be of great aid to students as the actual appearances of the specimen have been accurately reproduced.

We regret to say that the book is poorly written. The author is careless in his diction. He writes in too colloquial a style, and clearness of statement is often lacking. Some of the clinical methods are incorrectly described, and not a few other errors have been noted.

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PLAGUE IN INDIA.

THE plague situation in India, to which each year the attention of the civilized world is directed, is of far reaching interest and importance. Since the beginning of England's rule over this eastern country one of the very greatest sanitary problems which it has had to face has been this destructive disease. That there is yet much work to be done before a final solution is reached is shown by the frightful yearly mortality.

Renewed interest has of late been excited in the matter through a letter which the King of England has addressed to the Viceroy of India showing his deep sympathy with the sufferings of the people and the need of the adoption of measures successfully to combat the disease. Our contemporaries, the *British Medical Journal* and the *Lancet*, both comment on this letter and discuss at considerable length editorially the present situation. Precisely what the measures of relief may be are apparently not yet definitely determined, but so far as outlined will probably consist in the organization of four or five administrative centers in places where plague is endemic. In these centers will be stationed a well equipped medical department, familiar with the conditions, and under its direction all methods at present known of combating the disease through fumigation, disinfection, destruction of rats and other vermin and a painstaking pathological and bacteriological study will be systematically carried out.

From the standpoint of epidemiology a study of the history of plague in India is a matter of the very greatest interest. The disease appears to have been prevalent in India for many years, but its official recognition under the present government took place on Sept. 23, 1896, when it visited Bombay. During the eleven years which have supervened between that time and this it is estimated that upwards of five and a half million people have died of it. It is not known how the fatal infection reached Bombay. It may have been conveyed from Hongkong or from disease centers in Persia or Arabia. That it has spread widely from Bombay is a fact of very recent history. Last June Mr. Morley informed the House of Commons that upwards of a million deaths occurred in each of the years 1904 and 1905. Last year the situation improved somewhat, the mortality sinking to only half a million, but this year again the situation was worse than ever before, inasmuch as 642,000 deaths occurred in the first four months, a record which has never been exceeded for the same period. This is certainly a remarkable showing in view of the fact, as Mr. Morley asserted, that the government of India has given most unflagging and energetic attention to measures for exterminating or mitigating the epidemic. It is, however, an interesting commentary that much of this effort was unavailing because an attempt to discover the true pathology and etiology of the disease was in great measure neglected. This mistake cannot again be repeated, and experimental methods of dealing with the scourge are fortunately becoming less and less necessary as knowledge of its etiology and modes of transmission advance. Haffkine's discovery of a method of plague inoculation, brought out in 1897, was appreciated by the Indian Government, but through an unfortunate misunderstanding his continued service has been hampered, it is to be hoped, however, only temporarily. In 1905, through the suggestion of the Lister Institute, systematic work was organized by Dr. C. J. Martin, its director. Since then a scientific commission has been at work in India directing its attention especially to the spread of plague among rats and of means of contagion. Through these researches it has been established that the bacillus of plague is carried from rat to rat by fleas, and that the rat flea may also be a parasite of man, and, in the second place, even when grossly contaminated that floors and walls do not long retain the infection. In 1905, also, the Royal College of Physicians of London presented a memorandum to the Secretary of State for India calling attention to the world-wide danger of such an epidemic as has existed in India since 1896. It was urged that a more liberal staff of investigators should be employed and that a special sanitary service should be established. Mr. Morley has also placed him-

self among those who believe that not so much has been done by the local government as might have been possible, and doubts "whether the last word of medical science and of administrative skill has really been said." The attitude of the medical profession has of late been one of considerable skepticism in this regard, and it has from time to time so expressed itself.

It is certainly to be hoped, with the appalling death-rate which this year has already brought forth, and with the increasing knowledge which the laboratory is providing, that more stringent measures than ever before will be taken to eradicate or markedly diminish the prevalence of a disease, the continued existence of which is rapidly becoming a reproach to modern medical science. We have no doubt, with the expresse dinterest of His Majesty and the formation of a more adequate medical staff, that before many years have elapsed plague in India will be as little known as cholera or yellow fever in this country. No efforts should be spared to hasten the day.

REPORT OF THE CARNEY HOSPITAL FOR 1906.

THE Carney Hospital in South Boston ministers primarily to a large and populous section of the city, and has for many years been accomplishing a beneficent work in caring for the sick and at the same time developing its resources and methods in accordance with progressive ideas. This hospital is now the third largest in Boston, and, although under the direct charge of Roman Catholic Sisters of Charity, it is entirely non-sectarian in its reception and care of the sick. At present the hospital has about two hundred beds and receives patients from various parts of New England and the British provinces, the greater number of whom pay nothing for their care. About twenty-six hundred patients are treated in the wards yearly, and many times this number in the out-patient departments. This hospital has for years filled a particularly valuable function in that it receives persons suffering from chronic disease who are given no welcome elsewhere, except at the almshouse hospital on Long Island. The progressive policy which has marked the hospital for many years has brought it to a state of efficiency in which those primarily interested in its development must take a profound satisfaction. It is no doubt generally known that some years ago the system of graded services of visiting physicians and surgeons was adopted on the surgical side with Dr. John C. Munro as surgeon-in-chief. We have recently had occasion to call attention to the fact that this policy has also been adopted in the medical service of which Dr. Henry A. Christian has been appointed physician-in-chief. This method of conducting a hospital service has proved its usefulness elsewhere, and it is much to the credit of the Carney Hospital that it has overcome the conservatism of long usage in this community and adopted a method which on the whole must conduce to a closer study of the patients and to the furtherance of medical science.

It may not be generally known that it was at this hospital that the late Dr. John Homans first demonstrated to the medical profession in New England the possibility of operating upon ovarian tumors. Inasmuch as Dr. Homans was one of the first surgeons in the world to advocate this procedure which at that time seemed an extreme of radicalism, the Carney Hospital may well take to itself a certain credit for having offered its facilities to this pioneer work. Founded by Andrew Carney in 1863, the hospital began its career by treating fifty-three patients in that year. In 1906 twenty-five hundred patients were treated in the wards and fifty-six thousand in the out-patient department. With so creditable a past the future of the hospital seems equally assured. It is also not to be questioned that it will represent, even more than it has hitherto done, the progressive tendency in hospital management under the régime which has now been perfected by the appointment of a physician-in-chief having general oversight of all medical cases.

FINAL STATISTICS OF JULY FOURTH.

FOR five years past the *Journal of the American Medical Association* has made a valuable statistical inquiry into the injuries resulting from the celebration of July Fourth with special reference to tetanus. As a result of this inquiry, it appears that the total casualties occurring July Fourth this year were 164 killed and 4,249 injured, many of these latter permanently maimed. This showing, however, is not altogether discouraging when compared with 1906, particularly as regards tetanus. This year there were 73 tetanus cases as contrasted with 89 last year. In 1905 there were 31 more cases than this year; in 1904, 32, and in 1903, 342. It is evident, therefore, that the wide protest against tetanus-producing toys has resulted in a definite awakening of the public conscience. Tetanus, however, still continues to cause more deaths than any other single agency,

but gunshot wounds, giant crackers, and explosions come high in the list. Perhaps the most deplorable fact in the entire situation is that 31 persons were burned to death through carelessness, most of them being young girls and children. The figures which the *Journal of the American Medical Association* collects each year, and we trust will continue to collect, are the strongest possible argument for a modification of present methods of celebration. The figures should be widely advertised.

MEDICAL NOTES.

Yellow Fever in Havana. — It is reported that a case of yellow fever has appeared in Havana, being the first this summer.

Smallpox in Vienna. — The statement is made that within the ten days ending Aug. 28, 80 cases of smallpox have been reported in Vienna. Free vaccination stations have been established which are eagerly being sought by the people.

Plague in San Francisco. — It is reported that during the summer 9 cases of bubonic plague have been discovered in San Francisco and 7 deaths have occurred. No alarm is felt as to the spread of the disease, but incoming vessels are being carefully inspected.

A New Surgical Journal. — A new surgical journal with the title *Archives générales de Chirurgie*, has begun publication in Paris under the editorial supervision of Professors Lannelongue and le Dentu and Doctors Nové-Josserand, Picqué and Mauclaire. It is designed that this publication shall appear monthly, and that each number shall contain three original articles, abstracts of original papers on general surgery, gynecology, the surgery of infants, orthopedic and urinary surgery. There will in addition be book notices and a bibliographical index of surgical literature. This first number indicates a very carefully edited and comprehensive discussion of surgical matters and the journal no doubt will take a place of importance among periodicals devoted to surgery.

A Stimulus to Vaccination. — In view of the fact that smallpox prevails to an alarming extent in certain parts of the State of Illinois, the State Board of Health has had printed large posters which it requests shall be posted in conspicuous places. In addition to certain facts regarding smallpox, its nature, and its supposed means of contagion, five photographs are reproduced, four of them representing smallpox patients in various degrees of eruption, and another illustrative of smallpox contagion in the absence of vaccination. The pictures are unpleasant and should at least do something toward warning the people against exposing themselves unnecessarily to the disease through neglect of vaccination.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 4, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 33, scarlatina 23, typhoid fever 19, measles 12, tuberculosis 38, smallpox 0.

The death-rate of the reported deaths for the week ending Sept. 4, 1907, was 21.14.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 31, 1907, was 231, against 227 the corresponding week of last year, showing an increase of 4 deaths and making the death-rate for the week 19.77. Of this number 119 were males and 112 were females; 224 were white and 7 colored; 163 were born in the United States, 60 in foreign countries and 8 unknown; 53 were of American parentage, 149 of foreign parentage and 29 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 28 cases and 0 deaths; scarlatina, 20 cases and 0 deaths; typhoid fever, 18 cases and 1 death; measles, 20 cases and 2 deaths; tuberculosis, 40 cases and 15 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 8, whooping cough 1, heart disease 26, bronchitis 5 and marasmus 10. There were 14 deaths from violent causes. The number of children who died under one year was 88; the number under five years, 106. The number of persons who died over sixty years of age was 37. The deaths in public institutions were 84.

There were 0 cases and 0 deaths reported from cerebrospinal meningitis during the week.

Dr. Robert W. Lovett, a Member of the Massachusetts State Board of Health. — Governor Guild has presented the name of Dr. Robert W. Lovett, of Boston, as a member of the Massachusetts State Board of Health, to fill a vacancy caused by the resignation of Dr. John W. Bartol. Dr. Lovett's work in orthopedic surgery, and particularly that which relates to the proper seating of school children and allied matters, should make him a particularly valuable member of the board.

NEW YORK.

CHILDREN'S HOSPITAL AT ROCKAWAY BEACH. — The New York Association for Improving the Condition of the Poor has completed plans for a children's hospital to be erected at Rockaway Beach, on a site, 1,000 feet in length, which the city has agreed to reserve for it on the new five-mile beach which it has acquired for a seaside park. The hospital is to consist of fourteen pavilions, three stories in height and surrounded by broad verandas. The two pavilions at either end of the series will be placed parallel with the ocean shore and the others at right angles to it, and each pavilion is to accommodate 60 patients.

INSPECTION OF WATER SHEDS. — At a meeting of the New Jersey State Water Supply Commission held on Aug. 27 it was decided to make a complete scientific inspection of the Rockaway, Pequannock and Passaic watersheds, and also of the sites of the proposed dams at Mountain View and Singac. It is by the construction of these two dams that it is proposed to form a large lake, the estimated cost of the entire undertaking being $7,000,000. This lake will flood several villages of Northern New Jersey and render necessary a change in the main line of the Delaware, Lackawanna & Western Railroad, as well as minor changes in the lines of three other railroads. The water thus stored up will be the property of the state, and is to be sold for drinking and manufacturing purposes. It is the design of the Water Commission to so conserve the present potable supply that great corporations may not impound water and sell it at exorbitant rates to municipalities.

SEATING OF SCHOOL CHILDREN. — It is stated that for the first time in a number of years the public school authorities will enter on the new school year with a fair prospect of providing, within a reasonable time, sittings for all the pupils entitled to attend school. When Mayor McClellan was elected he declared that this would be one of the great aims of his administration, and during the past year the progress in providing accommodations by the enlargement of old school buildings and the erection of new ones has been substantial, while the plans for the ensuing year will secure even better results. The total number of new sittings available when the schools open on Sept. 9 will be 50,185; 46,085 in the elementary schools and 4,100 in the high schools. Owing to the more rapid growth in population in Brooklyn, and also partly to the fact that it has not in the past received quite so much attention as it really was entitled to, that borough will get a slightly larger number of new sittings than Manhattan. These will amount to 17,700, as against 17,350 for Manhattan.

FIRE IN THRALL HOSPITAL. — A serious fire occurred on Aug. 24, in the lower portion of Thrall Hospital, at Middletown, N. Y., by which the lives of 26 patients were endangered. One of these, the wife of Horace Hall, of Ridgebury, had been operated on just before the fire broke out, and was still under the influence of ether when she was carried from the building by her husband. Arthur Thornley, an orderly, performed heroic service in the work of rescue, and was so severely burned that it was thought at first that his injuries would prove fatal. After the fire was over all the patients were moved back to the hospital, as the upper floors were not reached by the flames.

INTERNATIONAL ZOÖLOGICAL CONGRESS. — The members of the Seventh International Zoölogical Congress, recently in session in Boston, arrived in New York on Aug. 26 for a week's stay. On the 27th a dinner was given for them at the Majestic Hotel, and later they attended a reception and entertainment at the American Museum of Natural History as the guests of the trustees and officers of the museum and of the New York Academy of Sciences. During the evening they listened to a number of brief lectures at this institution, one of them being by Prof. Henry Fairfield Osborn, who has just returned from an expedition to Egypt in which the explorations in the Fayoum brought to light some remarkable bones of the eocene period. On Aug. 29 they were the guests of the New York Zoölogical Society at a novel luncheon served in the Lion House at the Zoölogical gardens in Bronx Park, with a gallery of lions, tigers and leopards as spectators. A long table, set for 250 persons, ran the full length of the building. On one side was an embankment of palms and on the other the row of cages, where the animals were pacing back and forth and from time to time gave out roars which completely drowned the music of the band hired for the occasion. In the evening the zoölogists attended a reception given in their honor at the New York Aquarium, at the Battery. The entertainments of the week also included an excursion to West Point and Garrisons, opposite, tendered by Professor Osborne, who has a beautiful country-seat at the latter place, situated on one of the loftiest points of the Hudson Highlands.

Mortality Statistics. — The condensed quarterly report of the Bureau of Records of the New York City Health Department for the three months ending June 30, 1907, shows that the mortality in the city during the quarter represented an annual death-rate of 17.93, as against 18.29 in the corresponding quarter of 1906. The corrected death-rate, excluding non-residents and infants under one week old, was 17.06 in 1906, and 16.74 in 1907. The number of deaths during the quarter was 19,146, as against an average of 18,436 for the corresponding quarters of the preceding five years, producing, with the estimated population, a death-rate of 18.95 per 1,000; a decrease of 1.02 points. Comparing the number of deaths from the principal causes with those of the preceding quinquennial averages of the corresponding quarters, corrected to correspond with the increase of population, the following decreases are found: malarial fevers, 12; smallpox, 29; measles, 82; diphtheria and croup, 126; tubercular diseases other than pulmonary tuberculosis, 51; cerebrospinal meningitis, 267; apoplexy and softening of the brain, 75; acute bronchitis, 183; lobar pneumonia, 307; diarrheal diseases under five years of age, 185; Bright's disease and acute nephritis, 184; accidental causes, 92; suicides, 69. Those showing increases were the following: typhoid fever, 37; scarlet fever, 16; whooping-cough, 9; influenza, 24; pulmonary tuberculosis, 33; cancer, 56; organic heart disease, 430; broncho-pneumonia, 218; sunstroke, 8; homicide, 17. It will then be seen that the only marked increases have been in broncho-pneumonia and organic diseases of the heart, while the decrease in deaths from lobar pneumonia, cerebrospinal meningitis, Bright's disease, and diphtheria is very gratifying. Another source of gratification is the decrease in mortality among infants and young children. The deaths under one year of age decreased 225, under five years, 797, and between five and sixty-five years, 379; while those at sixty-five years of age and over increased 92.

Obituary.

SENECA D. POWELL, M.D.

Dr. Seneca D. Powell, for many years a prominent surgeon in New York, died on Aug. 24 at Greenwich, Conn., to which place he had retired about three years ago on account of failing health. He was a native of Alabama, and was born on Jan. 5, 1848. At the outbreak of the Civil War he was a cadet in the University of Alabama, and, leaving that institution, he served as a volunteer in the Confederate Army until the close of the war. He then studied medicine, and was graduated in 1869 from the medical department of the University of Virginia and in 1870 from the New York University Medical School. In 1871, after serving as interne at Bellevue Hospital, he was appointed an assistant inspector in the New York Health Department, and shortly afterward clinical assistant to the chair of theory and practice of medicine in Bellevue Hospital Medical College. From 1879 to 1882 he was adjunct professor of surgery in the New York University Medical College. In the latter year he became connected with the New York Post-Graduate Medical School and Hospital as lecturer on surgical dressings, and since 1887 he had been professor of clinical surgery in that institution. He was visiting surgeon to St. Mark's Hospital, as well as to the Post-Graduate Hospital. He was vice-president of the Medical Society of the County of New York in 1891 and president in 1893. In 1895 he was vice-president of the Pan-American Medical Congress at Washington, and in 1898 president of the New York State Medical Society. Dr. Powell was well known as a writer, especially on brain surgery and the surgical uses of phenol. He devoted much time and attention to the toxicology of this drug, and his services in demonstrating the efficacy of alcohol as an antidote to it are deserving of lasting remembrance.

Current Literature.

Medical Record.

Aug. 10, 1907.

1. Bulkley, L. D. *Some Plain Truths about Syphilis.*
2. *Gaertner, F. *The Differentiation of Black Pigment Found in the Liver, Spleen and Kidneys from Coal Dust or Other Foreign Deposits.*
3. Thompson, J. B. *Prostatic Concretions with Special Reference to Etiology and Treatment.*
4. Edgar, J. C. *Ophthalmia of the Newly Born.*
5. Hagner, F. R., and Fuller, H. G. *Sterility in the Male, Its Causes and Surgical Treatment.*

2. Gaertner has studied extensively the black deposits found post-mortem in the lungs, bronchial glands, spleen, liver and kidneys, and their differentiation from pigment. The effects of dust in man depend on the kind of dust, amount, constancy of presence, susceptibility of the individual, rapidity of absorption, chemical reaction of the tissues, and amount of irritation present. Dust is at once driven into the alveoli, the smaller particles are absorbed, while the larger cut their way into the lung tissues. Hemorrhages, chronic bronchitis and pneumonia are produced. The author has proved by tests that this material consists of coal-dust, soot, etc. Absorption is favored by inspiration and the particles pass into the lymphatics, which communicate with the subpleural peribronchial and perivascular lymphatics. From these it is carried to the bronchial and tracheal glands. Lymphadenitis and periadenitis develop, and cicatricial tissue forms with contraction; or an acute process goes on with suppuration, and may

extend to the pleura, bronchi, veins, arteries, heart and pericardium. The gland may become calcified and be conveyed by perforation into the air passages and coughed up. The foreign substances may enter the blood stream and be carried to the other organs. In the spleen the pigment is found along the smaller arteries and in the marginal zones of the Malpighian bodies. In the liver it is in the periportal interacinous tissues. In kidneys it is rare. It may be differentiated from micrococci by lying mostly in the cells which germs do not do, and by staining differently. Hydrochloric acid distinguishes it from putrid products of the epithelium.

THE NEW YORK MEDICAL JOURNAL.
AUG. 10, 1907.

1. *EDGAR, J. C. *The Urine of Pregnancy.*
2. *DANA, C. L. *The Cerebral Localization of Aphasia and Its Classification on an Anatomical Basis.*
3. LOVING, S. *Angioneurotic Oedema.*
4. GORDON, A. *Hysteria. Nature of the Malady.*
5. *LUCAS, D. R. *Clinical Aspects of Recent Developments in the Physiology and Pharmacology of the Ureter.*
6. FELBERBAUM, D., AND FRUCHTHANDLER, E. A. *Addison's Disease in Children with Report of a Case.*
7. RUGH, J. T. *An Unpleasant Experience with Ethyl Chloride.*
8. BERNART, W. F. *Mercuric Values in the Treatment of Syphilis.*

1. Edgar's article reports further investigations of the urine of pregnancy, largely confirming the results published in a previous article. He lays great stress upon the importance as a danger signal of increased ammonia and undetermined nitrogen percentages in the total nitrogen of the urine. Scanty amount of urine, albumin and casts are significant when they are present, but even though these are absent the patient may be on the verge of eclampsia. Cases are reported in which the excess of ammonia and of undetermined nitrogen was the earliest evidence of trouble which later developed.

2. Dana, by means of an ingenious form of graphic representation, describes the typical symptoms of the four chief types of aphasia: (1) the frontal or fronto-capsular characterized by aphemia, with retained ability to read, write and understand; (2) parieto-occipital aphasia, characterized by alexia, with ability to speak, write and understand, associated with hemianopsia; (3) temporal or temporo-parietal aphasia, characterized by anomia, some mind deafness, paraphasia, much agraphia and alexia, without hemiplegia but with some astereognosis, anesthesia and ataxia; and (4) fronto-lenticular aphasia, the common mixed aphasia, characterized by aphemia with much agraphia, alexia, mind deafness and deafness with hemiplegia. The chart by which each case is represented includes twenty-two functions tested and recorded as "normal," "slightly impaired," "seriously impaired" or "absent." In conclusion, a short discussion of each of the more important of these functions is given with the anatomical locations and significance of impairment.

5. Lucas reports experiments dealing with the physiology, normal and pathological, of the ureters. It has previously been demonstrated that the ureters have peristaltic activity. Lucas observed that the peristaltic waves are markedly influenced by ether, still more by chloroform and to some extent by other drugs. Chloroform caused marked retardation of the peristalsis; caffein produced marked stimulation. Ligation of the ureter caused blocking of the peristalsis below the point of ligation and marked increase above it. The intra-ureteral pressure in the pelvic portion of the ureter is fairly constant; that in the lower portions is variable and may be in excess of that of the renal pelvis without a back flow of urine.

[F. W. P.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
AUG. 10, 1907.

1. JOHNSON, J. T. *The Influence of Gonorrhea as an Influence of Depopulation.*
2. KEYES, E. L. *Syphilis as a Cause of Depopulation and Race Deterioration.*
3. HUNSBERGER, J. N. *Artificial Childlessness and Race Suicide.*
4. *ADLER, H. M. *A Clinical Method of Determining the Alkalinity of the Blood.*
5. FORDYCE, J. A. *The Vessel Changes and Other Histologic Features of Cutaneous Syphilis.*
6. ASHFORD, B. K., AND KING, W. W. *Uncinariasis; Its Development, Course and Treatment.*
7. *BUNTING, C. H. *Experimental Anemia.*
8. WRIGHT, A. E. *Principles of Vaccine Therapy.* (To be continued.)
9. *ROYSTER, H. A. *The Management of Dislocation of the Shoulder Joint Complicated by Fracture of the Neck of the Humerus.*
10. MCDILL, J. R. *Dysenteric Abscess of the Liver in the Philippine Islands.*

4. Adler discusses the desirability of a practical clinical method for determining the alkalinity of blood. He notes the two general methods by which the reaction of a fluid may be quantitatively measured: (1) titration to an end point, and (2) determination of the H and OH ionization. The former yields information concerning the amount of base or of acid present in a solution, but no direct evidence concerning the exactness of the equilibrium. The latter yields no direct information regarding the absolute amounts of base or of acid in the solution but gives evidence concerning the intensity of the alkalinity, the condition of the equilibrium. Heretofore only titration methods have been used on account of the difficulty of the technic and the want of an indicator to show the slight degree of the ionization met in the blood serum. Salm, however, has shown that rosolic acid and neutral red give sufficiently sharp indications at the degree of ionic concentration of the blood. Adler finds that rosolic acid with 1 cc. of rabbit's blood gives a pink color which can be compared with a standard. By excluding the corpuscles and working only with serum, confusion from the laking of blood and liberation of the color of the corpuscles can be avoided. A drop of serum from a capillary tube produces a strongly marked red color when allowed to fall on prepared rosolic acid test paper, which contrasts well with the delicate salmon pink of the unchanged parts of the paper. The red color indicates alkalinity. The serum in two cases of diabetic coma and in one case of meningitis with acetonuria did not produce this change in color, but the blood was alkaline in cases of meningitis without acetone in the urine.

7. Bunting by means of hemolytic poisons (ricin and saponin), intravenously injected into animals, has been able to produce experimental anemias closely simulating, both in blood picture and in changes of bone marrow, the primary anemia of human beings. Simple bleeding or slower administration of these poisons on the other hand merely produced an anemia of the so-called secondary type. Bunting considers that the results of this and of other work justify the conclusion that pernicious anemia is due to the absorption of hemolytic substances in such quantity that not only the blood but also the bone marrow is attacked, the typical blood picture being due to disturbance of the blood-forming function of the bone marrow. Secondary anemias, on the other hand, may be attributed to causes which act on the blood only, the bone marrow being unaffected. As to the origin of the hemolytic agent or agents assumed in this theory of pernicious anemia we have almost no knowledge, but there is much reason to suspect absorption from the alimentary tract or the oral cavity.

9. Royster discusses the subject of dislocation of the shoulder complicated by fracture of the neck of the humerus, with a report of 4 original cases and a review of the literature. The condition is probably more frequent than is recognized and its description in textbooks is generally inadequate. The diagnosis is difficult; in some cases even the x-ray may leave one in doubt. Experience long ago showed that leaving the dislocation unreduced until the fracture had united was almost certain to render reduction impossible. Immediate reduction of the dislocation is in most cases impossible. The most favorable results have followed operative treatment. The incision to be preferred extends from the acromial process directly downward through the fibers of the deltoid or between the

deltoid and the pectoralis major. In recent cases reduction is usually easy. In old cases there is often great difficulty; different operators have employed the gimlet, corkscrew or hook. The bone fragments are then adjusted and rarely require wiring. The arm should be put up in abduction, best retained by a pad in the axilla, a shoulder cap of plaster of Paris and a roller bandage. Fixation should not be kept up more than two weeks.

[F. W. P.]

British Medical Journal.

August 3, 1907.

1. Davy, H. *President's Address. Science in its Application to National Health.*
2. White, W. N. *Address in Medicine. A Plea for Accuracy of Thought in Medicine.*
3. *Butlin, H. T. *Address in Surgery. On the Contagion of Cancer in Human Beings. Auto-inoculation.* [See under *Lancet*, Aug. 3, 1907, No. 3.]

Aug. 10, 1907.

1. Taylor, F. *An Address on the Progress of the Medical Man.*
2. Clarke, F. H. *An Address on the Occurence of Epileptoid Attacks in Tachycardia and Bradycardia.*
3. Mott, F. W. *Bilateral Lesion of the Auditory Cortical Center. Complete Deafness and Aphasia.*
4. Caton, R. *The Prevention of Valvular Disease.*
5. *Franze, P. C. *Theory and Technique of Orthodiagraphy.* [See Abstract No. 3, in the *Lancet* for Aug. 10, 1907.]
6. Newton, I. *A Case of Depression of the Parietal Bone in a Newly Born Infant: Trephining on the Twelfth Day: Recovery.*
7. Veitch, A. *Malnutrition in an Infant Due to Excessive Putrescence in the Alimentary Canal Successfully Treated by Lactic Acid Bacilli.*
8. Manwaring-White, R. *A Case of Intussusception.*

The Lancet.

Aug. 3, 1907.

1. Davy, H. *Presidential Address on Science in its Application to National Health.*
2. White, W. H. *Address in Medicine. A Plea for Accuracy of Thought in Medicine.*
3. *Butlin, H. T. *Address in Surgery on the Contagion of Cancer in Human Beings. Auto-inoculation.*
4. Bishop, E. S. *Movable Kidney with a Description of an Operation for Anterior Nephropexy.*
5. Pavy, F. W. *A Study of the Conditions Producing the Anomalous Reaction not Infrequently Met with on Testing Urine for Sugar with Fehling's Solution.* (Continued article.)
6. Maberly, J. *Iodine as an Antidote for Carbolic Acid Poisoning.*
7. Seheult, R. *Notes of a Case of Addison's Disease in a Negress.*
8. Hodgson, S. *Note on a Case of Tuberculous Cerebrospinal Meningitis.*

3. Butlin undertakes the study of auto-inoculation of cancer as preparatory to the study of the communicability of cancer from one human being to another. He points out the difficulties of animal inoculation. Even implantation is not easy, inasmuch as any sepsis will prevent inoculation. Most cancers having an exposed surface for contact are septic. These difficulties explain the rarity of the cases of auto-inoculation. He insists on three conditions: (1) both growths must be the same and communicable; (2) their identity must be proved microscopically; (3) the primary disease must be demonstrated. He reports 16 cases, of which 13 fulfill the requirements. Three cases were from one labia vulvæ to the other; 3 in the larynx; 1 from one lip to the other; 1 in the jaws; 2 from the kidney to lower down in the urinary tract; 2 cases of transference by rubbing with the hand; and 1 case from the uterus to the vagina. This last case is of special interest as the contact cancer was cylindrical carcinoma in the vagina, which is lined with squamous epithelium. He considers the possibility of implantation of cancer by "infected" instruments as a real danger in surgery.

[R. I. L.]

Aug. 10, 1907.

1. Hewitt, F. W. *General Surgical Anesthesia.*
2. Ehrlich, P. *Experimental Researches on Specific Therapeutics.*
3. *Gordon, W. *Bodily Posture and Cardiac Physical Signs.*
4. *Robertson, W. F., and Young, M. C. W. *Further Researches into the Etiology of Carcinoma: Note upon Certain Histological Features of Carcinomatous Tumors Revealed by an Improved Ammonio-silver Process.*
5. Pavy, F. W. *A Study of the Conditions Producing the Anomalous Reaction not Infrequently Met with on Testing Urine for Sugar with Fehling's Solution.* (Concluded.)
6. Watson, C. G. *A Method of Amputation at the Ankle-joint Which Leaves the Heel Intact.*
7. Pearson, J. S. *A Suggestion for the Radical Cure of Femoral Hernia.*
8. Sutcliffe, W. G., and Bayly, H. W. *A Case of Streptococcic Septicemia: Treatment by Wright's Method.*

3. Gordon emphasizes the necessity of the examination of the heart of all patients in both the erect and recumbent positions. Some of the variations noted are, that the recumbent position raises and narrows the cardiac dullness, the difference in width being about three quarters of an inch in normal cases, much more marked in enlargement; and that the recumbent position increases the second sounds, especially the accentuated pulmonic second.

Certain murmurs are heard in the erect but not in the recumbent position, and *vice versa*.

Gordon used the ordinary methods of auscultation and percussion. Another observer, Franze, in the current number of the *British Medical Journal*, has taken up the question of postural differences as found by the orthodiagraph. The orthodiagraph also finds the heart at a lower level on standing, but finds that the actual width of the heart is narrower on standing than on lying.

4. Robertson and Young, by the advantage of an improved histological technique, bring forward the new evidence of five cases in support of the contention that carcinomatous tumors are etiologically related to a special protozoan organism. In these 5 cases they find certain cyanide-fast bodies, which appear as spherical intranuclear threads, spirals and ameboid forms. Polynuclear leucocytes manifest a strong chemotaxis towards these bodies. [R. I. L.]

The Scottish Medical and Surgical Journal.

July, 1907.

1. Cathcart, C. W. *On the Use of Massage and Movement in the Treatment of Fractures.*
2. *Fraser, J. S., and Comrie, J. D. *The Naso-Pharynx as Infection Carrier in Epidemic Cerebrospinal Meningitis.*

2. Fraser and Comrie investigated the naso-pharynx in an epidemic of cerebrospinal meningitis in Leith. They isolated the meningococcus from the nasopharynx in 2 of 13 cases (15%), and from the nasopharynx of 10 out of 69 persons (14%), who did not have the disease, but who were in close contact with cases. They also isolated the meningococcus from the air of the engine room of a ship, where some of the fathers of these cases worked, although none of the fathers had the disease. [R. I. L.]

Münchener Medizinische Wochenschrift, No. 25.

June 18, 1907.

1. Sellheim, H. *A Means of Acquiring Skill in Removing the Placenta.*
2. *Hildebrandt, H. *The Pharmacological Properties of the Oxybenzyltannins.*
3. *Baumgarten, O. *The Use of Oxybenzyltannins in Practice.*
4. *Bach, L. *The Relations of the Medulla to the Pupillary Reactions.*
5. Schmidt, G. B. *Cederschrold's Massage by "Rhythmic Pressure," and its Use in the After-Treatment of Abdominal Operations.*

6. *NEURATH, R. *Congenital Loss of Function in the Cranial Nerves.*
7. HOLZBACH, E. *Observations on Scopolamin Hemi-narcosis in Obstetrics; the Effect of Scopolamin on the Child.*
8. SCHWARDT. *Further Cases of Scleroderma Treated with Mesenteric Lymph Nodes.*
9. SICHERER. *Inherited Strabismus.*
10. JÖHNE AND SCHMIDT. *A Case of Cerebral Fat Embolism, Complicated with Tetanus.*
11. SCHUMM, O. *A New Fermentation Tube for the Demonstration of Sugar in the Urine.*
12. CROSS, W. *A New Stomach Tube for Use in Rœntgenoscopy.*
13. PENKERT, M. *Does the Lumbar Injection of Stovain Influence the Motor Activity of the Viscera? (Remarks on Roith's Article in No. 19 of this Journal.)*
14. SPUDE, H. *Reply to B. Fischer's Criticism of My Article, "The Cause of Cancer and of Tumors in General."*
15. *STADELMANN, E., AND WOLFF-EISNER, A. *Typhoid and Colon Sepsis, and Typhoid Fever Considered as an Endotoxin Disease.* (Concluded.)

2. Hildebrandt has made synthetically a number of oxybenzyl derivatives of tannin, the graphical formulæ and properties of which are given in this article. The thymol derivative is recommended as a substitute for tannin itself over which it possesses the advantages that it is insoluble in acids, therefore does not irritate the stomach, and that it is tasteless. This drug, the trade name of which is tanno-thymal, possesses marked astringent power, and is not toxic or irritating.

3. Baumgarten recommends tannothymal, the new drug described in the foregoing article, as an astringent to control diarrhea. In 3 cases which resisted other forms of treatment good results were obtained.

4. Experimental work done with H. Meyer leads Bach to the assumption of an inhibition center in the medulla for the light reflex of the pupils. They have observed rigidity of the pupils and myosis after section of the medulla near the calamus scriptorius, and rigidity with pupils of medium width after laying bare the floor of the fourth ventricle. In the latter case the light reflex was immediately restored on cutting across the medulla in the *upper* portion of the floor of the fourth ventricle, probably owing to cutting of the nerve fibers leading away from the inhibition center.

6. Neurath analyzes the literature of congenital defective function of the muscles supplied by the cranial nerves. Most frequently the eye muscles are involved, either alone, or with the face; sometimes there are deformities of the external ear, or other malformations. Usually the nuclei of the nerves supplying the affected muscles are found either aplastic or degenerated. In Neurath's case, however, the nuclei were found intact, and it seems probable that there was a congenital aplasia of the muscle itself.

15. Stadelmann and Wolff-Eisner report a case of "typhoid septicemia" in which none of the usual symptoms of typhoid were present except enlarged spleen and fever; the diagnosis was made only on the bacteriological findings. At the autopsy on the twenty-third day of the illness, only trivial lesions were present in the intestines, so that the post-mortem diagnosis of typhoid could be made only from the cultivation of typhoid bacilli from the bile. Such cases as this lead them to consider typhoid as a septicemia, the symptoms being due to the action of endotoxins. The latter produce in small doses a rise of temperature, in large doses a fall. This explains why in the guinea pig the experimental typhoid infection runs with subnormal temperature and rapidly leads to death or recovery; for the serum of this animal possesses greater bacteriolytic power than that of man, and the dose of endotoxin set free at any one time is therefore larger. A discussion of the pathogenicity of the colon bacillus, with the report of a case of sepsis due to it, ends the paper. [W. T.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 26. JUNE 27, 1907.

1. *STRASBURGER, J. *Influence of the Elasticity of the Aorta upon the Relation of Pulse Tension to Systolic Heart Pressure.*
2. *EWALD, C. A. *Idiopathic, Spindle-Shaped Dilatation of the Esophagus.*
3. *GRÜNBAUM, D. *Milk Secretion after Castration.*
4. JOSEPH, M. *Treatment of Venereal Diseases.* (Concluded.)
5. *HAUSCHILD. *"Euferrol."*
6. GROEDEL, T. *Discharge of Appendix through Rectum with a Septic Peritonitis.*
7. ZUELZER, R. *An Orthopedic Chair Brace.*

1. Strasburger's researches on the elasticity of the aorta in arteriosclerosis have shown that in this condition the distensibility is diminished. This he regards as a compensatory measure. These results are directly opposite to those obtained by Thoma, who, the author claims, worked by faulty methods. Since systolic heart pressure is dependent upon a constant expulsion time and also upon the elasticity of the artery walls, chiefly that of the aorta, it is evident that investigations of the volume changes of the aorta, with different pressures and at different ages, is very important. Strasburger thinks that the results of his estimations of the capacity of the aorta, when compared with blood pressure readings, prove many hitherto conjectural points about the circulation. The article is accompanied by charts.

2. Ewald reports a case of spindle-shaped dilatation of the esophagus, which he followed for three years and in which the diagnosis was made before death. The autopsy showed no adequate cause. There was no degeneration of the vagus nor was the microscopic condition of the esophageal muscle such as would occur if the vagus were degenerated. The specimen showed that the dilatation occurred in the lower two-thirds and the circular muscles were hypertrophied to 3 mm. in thickness. A spasm of the cardia and hypertrophy and subsequent dilatation of the muscle wall were probably the etiological factors.

3. Grünbaum reports 21 cases of complete castration for various reasons, in which the secretion of the mamma occurred in 14 after the operation. Age, climacteric, pathological condition of ovaries, whether a multipara or nullipara, apparently made no difference. In no case of removal of the uterus leaving part of the ovary did the milk secretion start up. The author concludes that secretion of the mamma is dependent upon influences exerted by the ovaries.

5. Hauschild recommends the use of "Euferrol," an iron preparation, each capsule containing 0.012 gr., iron in form of an oxide, and 0.00009 gr., arsenious acid. [L. G. M.]

ANNALS OF SURGERY. AUGUST, 1907.

1. *PRINGLE, J. H. *Avulsion of the Spine of the Tibia.*
2. *SIMMONS, C. C. *Osteogenesis Imperfecta and Idiopathic Fragilitas Ossium.*
3. *BUERGER, L. *Traumatic Epithelial Cysts.*
4. WARE, M. W. *Syphilis of the Bones and some Radiographic Findings.*
5. *FREEMAN, L. *The Correction of Some Forms of "Saddle Nose."*
6. *RUSHMORE, J. D. *Intussusception.*
7. ROBINSON, E. F. *Operation in Two Stages for Relief of Ileus of Jejunum.*
8. *MACDONALD, T. L. *An Enormous Cyst of the Urachus.*
9. STOW, B. *Ureteritis Cystica Chronica.*
10. *RUSSELL, R. H. *Operation for Hypospadias.*
11. STONE, J. S. *A Male Pseudo-Hermaphrodite.*
12. WALKER, G. *A New Retractor to be Used in Suprapubic Cystotomy.*
13. ASHHURST, A. P. C. *Multiple Fractures with an Analysis of 240 Cases.*
14. THOMAS, T. T. *Fractures of the Head and Neck of the Radius.*
15. ARMSTRONG, G. E. *Isolated Fracture of the Great Trochanter.*
16. GIBBON, J. H. *Post-Operative Treatment.*

1. Pringle reports the case of a man, thirty-six years of age, who received a severe blow on the outer side of the knee, knocking it inwards. There was much effusion into

the joint cavity, but the only abnormal motion of the joint demonstrable was in abduction. This was so great that it suggested rupture of the internal lateral ligament. At operation the anterior crucial ligament was found torn from the tibia, taking the spine with it. This was sutured with success. Two years later the knee was functionally perfect, only the very slightest degree of abduction being present, with the knee in full extension. This case adds one more to the three already on record in the literature.

2. Simmons reports two cases: one, a girl thirteen years of age, the other, an infant of ten months. A careful report is given of both cases; the first by x-ray examination, the second by autopsy. The etiology of the condition is still obscure.

3. Buerger brings forward three cases in support of the theory of Garré concerning epithelial cysts. In the course of an injury such as a puncture, the introduction of a foreign body, or a lacerated wound, a portion of the surface epithelium is deposited in the subcutaneous tissues, where it continues to grow, and finally forms a cystic tumor. In the first two cases the cyst was situated on the palmar surface of the tip of the index finger, and followed trauma. In the third case the cyst lay under the skin of the breast near the axillary fold, and no history of trauma was obtainable. The contents of these cysts is of a white pultaceous character.

5. Freeman has devised the following operation for the correction of saddle-nose, by means of a plate: (1) transverse skin incision at the root of the nose. (2) Undermining of skin along bridge and down the sides, by means of a director. (3) Insertion of a stout darning needle from the tip to the root of the nose, to serve as a guide when the plate is pushed into position. The plate should be of celluloid, with carefully smoothed edges, and perforated by numerous holes.

6. Rushmore emphasizes the fact that intussusception being an internal strangulated hernia, operative treatment should be employed immediately. Mechanical agents, such as water or air, should not be used. The mortality in 1892 of 51.7% has been reduced to 12.5% at the present date.

8. MacDonald's patient was forty years of age, and gave a history of a slowly growing abdominal tumor, beginning in the region of the bladder and growing upward, with the gradual onset of pressure symptoms, especially difficult respiration, pain and impaired digestion. The sac was situated in front of the peritoneum, but was surrounded by very firm adhesions. These were broken up with great difficulty, and the cyst removed. In the wall of the cyst were a number of nodules, which proved to be papillomata. An interesting feature in the case was the failure of the peritoneum to absorb a large amount of normal salt solution with which the abdominal cavity had been filled. On the seventh day after the operation the patient presented symptoms of sepsis. The lower end of the wound was opened, allowing the escape of quarts of the salt solution, which had become purulent, and which presented the colon bacillus characteristics. Drainage was continued for a week, after which convalescence and return to health were satisfactory.

10. Russell describes a modification of his original method of operation for the treatment of hypospadias. This method consists of two operations. At the first operation the penis is released and straightened and the glandular portion of the urethra is formed, and lined with preputial skin. At the second operation the perineal and penile portions of the urethra are formed and closed, so as to complete the channel from the perineal opening to the glandular urethra. For this operation suprapubic drainage is employed. A year or more, he states, should be permitted to elapse between the two operations.

[W. C. Q.]

Electrical Excitability of the Motor Nerves. CHVOSTEK (*Wien. klin. Wochenschr.*, No. 26) says that the Erb phenomenon is a constant symptom of tetany in all acute stages. It can always be found, as well as the mechanical irritability, along some motor nerve when sought for persistently and at different times. But often the electrical excitability cannot be obtained a short time after a cramp, or it may show a diminution independently of the other symptoms. The diagnosis of tetany cannot be made with certainty by a moderate grade of the Erb phenomenon, as it is present in healthy individuals in certain conditions. In difficult cases the faradic current in minimal strength may insure the diagnosis by causing an immediate outbreak of tetany.

Experimental Tuberculosis of the Skin in Monkeys. KRAUS and GROSZ (*Wien. klin. Wochenschr.*, No. 26) find that tubercle bacilli from human sources, as well as the bovine type, can produce typical tubercular skin lesions in monkeys. The lesions caused by the human varieties remain centered about the point of scarification, while those originating from the bovine bacillus show progressive infiltration, ulceration and destruction of tissue, often with extension to the internal organs and ultimate death. There is an inverse ratio between the severity of the skin lesion and the number of bacilli visible there in.

[L. G. M.]

Miscellany.

THE DOMESTIC FLY.

THE following deserved editorial condemnation of the common fly, we quote from the New York *Medical Journal:* It is well known to members of the medical profession that the domestic fly is exceedingly active in the transmission of disease, but it is to be feared that the general public has as yet nothing like an adequate appreciation of the fly's pestiferous activity. We are glad, therefore, that at last the lay press has taken the matter up. Last Saturday the New York *Herald* gave its readers an excellent editorial article on the subject. "At no time of the year," says the *Herald*, "is the fly more of a nuisance and a danger than now, and a few mortals there are that may not be persuaded to be his sworn enemy anywhere, everywhere, and every time!"

It is doubtful if the fly is of the least use as a scavenger; he drops his load. Having imbrued his feet in tuberculous sputum or typhoid fever dejecta or some other noisome and revolting material, he makes haste to deposit a part of his spoils on your butter. He is an unclean creature and he spreads the seeds of pestilence. He is far more of a menace to human health than the mosquito, for he has no restricted repertoire. Filth of all sorts is his, and he distributes it industriously; and filth is apt to contain morbific matter. If he would only drown, it would be some consolation, but after prolonged submersion in milk, coffee, or the like he speedily revives and is ready to go at his nefarious work anew, having perhaps in the mean time poisoned the liquid which ought to have done him to death.

It is not alone as a distributor of pathogenic germs that the fly proves inimical to man's health, though doubtless in that capactiy he is the most malignant. By his interference with sleep in the early morning hours he unquestionably exerts a lowering effect on the vitality and renders the organism a readier prey to the germs of infectious disease, besides robbing us of that serenity which is essential to good digestion and to proper dealing with the affairs of life. So far as we can see, the fly is an unmitigated nuisance, and we are ready to join in the cry *delenda est musca.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 24, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1600	765	Quincy	14	9
Chicago	—	—	Waltham	5	1
Philadelphia	—	—	Pittsfield	16	—
St. Louis	—	—	Gloucester	8	1
Baltimore	248	108	Brookline	4	2
Cleveland	—	—	North Adams	5	2
Buffalo	—	—	Chicopee	9	6
Pittsburg	—	—	Northampton	4	2
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	6	—
Washington	—	—	Leominster	—	—
Providence	72	24	Hyde Park	5	—
Boston	243	100	Melrose	—	—
Worcester	43	16	Newburyport	—	—
Fall River	60	42	Woburn	4	—
Cambridge	32	18	Marlboro	2	1
Lowell	47	23	Westfield	7	5
Lynn	29	14	Peabody	—	—
New Bedford	30	17	Revere	7	3
Springfield	25	8	Attleboro	4	—
Lawrence	30	13	Clinton	—	—
Somerville	17	6	Adams	9	5
Holyoke	26	16	Gardner	—	—
Brockton	16	5	Milford	—	—
Malden	11	8	Watertown	1	1
Chelsea	8	4	Plymouth	—	—
Salem	12	6	Weymouth	—	—
Newton	11	4	Framingham	6	4
Haverhill	6	2	Southbridge	—	—
Fitchburg	11	2	Wakefield	—	—
Everett	14	10	Webster	—	—
Taunton	13	5			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED AUGUST 21, 1907.

WERTENBAKER, C. P., surgeon. Directed to proceed to Cape Charles Quarantine Station for temporary duty, upon completion of which to rejoin his station in Norfolk, Va.

CLARK, T., passed assistant surgeon. Granted leave of absence for fourteen days from August 26, 1907. August 21, 1907.

KING, W. W., passed assistant surgeon. Relieved from temporary duty at the Hygienic Laboratory, and directed to proceed to San Francisco, Cal., reporting to the medical officer in command, Angel Island Quarantine Station, for duty and assignment to quarters. August 21, 1907.

STANSFIELD, H. A., passed assistant surgeon. Directed to proceed to San Francisco, Cal., reporting to the medical officer in command for special temporary duty. August 17, 1907.

AMESSE, JOHN W., passed assistant surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Havana, Cuba, for duty in the office of the American consul-general. August 16, 1907.

COLLINS, G. L., assistant surgeon. Granted leave of absence for one day, August 17, 1907. August 16, 1907.

KRULISH, EMIL, assistant surgeon. Directed to proceed to Ellis Island, N. Y., reporting to the chief medical officer for duty. August 15, 1907.

ADAMSON, B. G., acting assistant surgeon. Granted ten days' extension annual leave, on account of sickness, from July 28, 1907. August 8, 1907.

BAILEY, C. W., acting assistant surgeon. Granted leave of absence for ten days from September 16, 1907. August 20, 1907.

HICKS, B. I., acting assistant surgeon. Leave of absence granted Acting Assistant-Surgeon B. I. Hicks for twelve days from August 4, 1907, revoked. August 15, 1907.

RANSOM, S. A., acting assistant surgeon. Transferred from Shanghai, China, to Kobe, Japan, for duty, vice Acting Assistant-Surgeon J. B. Fowler.

ROEHRIG, A.M., pharmacist. Detailed to represent the service at the fifty-fifth annual meeting of the American Pharmaceutical Association, to be held in New York City, September 2–7, 1907. August 20, 1907.

LA GRANGE, J. B., pharmacist. Detailed to represent the Service at the fifty-fifth annual meeting of the American Pharmaceutical Association, to be held in New York City, September 2–7, 1907. August 20, 1907.

ILTIS, G. W., pharmacist. Granted leave of absence for fourteen days from August 17, 1907. August 15, 1907.

BIERMAN, C. H., pharmacist. Granted leave of absence for thirty days from September 9, 1907. August 15, 1907.

RESIGNATIONS.

The resignation of Assistant-Surgeon E. T. Olsen was accepted by the president, effective October 12, 1907. August 15, 1907.

Acting Assistant-Surgeon Linton Turner resigned to take effect August 15, 1907. August 20, 1907.

Pharmacist A. G. Williams resigned to take effect August 31, 1907. August 20, 1907.

BOARDS CONVENED.

The Board convened to meet at Chicago, Ill., July 25, 1907, for the purpose of examining an inspector of immigrants, amended: Passed Assistant-Surgeon B. S. Warren to act in place of Acting Assistant-Surgeon J. J. Gerkins. August 20, 1907.

A board of officers was convened to meet at Galveston, Tex., for the purpose of recommending a site for a national quarantine station. Detail for the Board: Capt. Percy W. Thompson, U. S. R. C. S., Surgeon J. H. White, P. H. and M. H. S., and Capt. J. C. Oakes, corps of engineers, U. S. A. (By authority of Secretary of War.) August 19, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 31, 1907.

B. H. DORSEY, assistant surgeon. Detached from duty at the Navy Recruiting Station, Des Moines, Iowa, and ordered to Washington, D. C., September 3, for examination for promotion, then to wait orders.

C. M. OMAN, passed assistant surgeon. Detached from the "Arkansas" and ordered to the "Illinois," September 9.

C. H. DELANCY, passed assistant surgeon. Detached from the "Florida" and ordered to the Navy Yard, New York, N. Y.

E. A. VICKERY, assistant surgeon. Detached from the "Illinois" and ordered to the Navy Yard, Boston, Mass.

J. C. MARTIN, pharmacist. Detached from the Naval Dispensary, Washington, D. C., and ordered to the United States Naval Medical School Hospital, Washington, D. C.

L. O. SCHOTKY, pharmacist. Detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Hospital, Washington, D. C.

C. E. REYNOLDS, pharmacist. Detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the Bureau of Medicine and Surgery, Navy Department.

A. McK. JONES, acting assistant surgeon. Sick leave revoked; ordered to the Naval Recruiting Station, Des Moines, Iowa.

RECENT DEATHS.

DR. JOSEPH A. WINKLER, of Jamaica Plain, died last week at the age of seventy-seven. He was born in Savannah, Ga., studied medicine in New York and for the greater part of his life was a practitioner in Jamaica Plain.

DR. WILLIAM E. JOHNSON, for many years a practising physician at Keyport, Monmouth County, N. J., died at his home in Ontario, Canada, August 27.

DR. EDWARD J. MESSEMER, of New York, while abroad for the summer, died at Marburgh, Germany, on August 5. He was sixty years of age, and was graduated from the medical department of the University of the City of New York in 1871. He devoted himself more particularly to neurology, and at the time of his death was one of the physicians to the out-patient department of Mount Sinai Hospital.

DR. GEORGE WALDRON, a prominent physician of Rochester, N. Y., was instantly killed on August 28 in an accident, at Hopewell, near Canandaigua, in which his automobile was struck by a trolley car. Three aged women to whom he was giving a fresh air outing in his large touring car were also killed by the collision. Dr. Waldron was sixty-two years of age and was graduated from the medical department of the University of Buffalo in 1881.

BOOKS AND PAMPHLETS RECEIVED.

Massage of the Prostate and Stripping the Seminal Vesicles. By Ferd. C. Valentine, M.D., and Terry M. Townsend, M.D. Reprint.

Education in Sexual Subjects. By Ferdinand C. Valentine, M.D. Reprint.

The Treatment of Gonorrhœal Epididymitis. By Julius J. Valentine, M.D. Reprint.

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Original Articles.

THE OPERATIVE TREATMENT OF VARICOSE VEINS OF THE LOWER EXTREMITY.*

BY JOHN T. BOTTOMLEY, M.D., BOSTON.

NOT alone to the greater ills and affections that in themselves endanger human life should our professional care and attention be directed; the lesser ailments, rarely fatal but frequently disabling, call for relief and justly claim their due share of our notice. It is with this thought in mind that I bring to your attention in this paper the subject of varicose veins of the leg. I need make no apology, I trust, for my choice of topic. Recognized for centuries, widespread in its field, frequently crippling in its effects, attacking most often the wage-earning class,—this affection of the venous system is worthy of our best endeavors for its relief. Its treatment usually falls within the province of surgery, and it is through operative procedures alone that permanent and satisfactory results can be obtained in the very large majority of cases.

No lengthy discussion of the subject will be undertaken, but it may not be amiss to recall a few important facts with regard to the anatomy, etiology, symptoms and pathology of the affection before taking up the operative treatment.

There are two systems of veins in the lower extremity. In the leg each main artery has two accompanying veins which unite at the lower border of the popliteal space to form the popliteal vein; the latter in its turn becomes the femoral.

The internal and external saphenous veins with their branches form the superficial system. A detailed description is unnecessary. It is important to note that the internal saphenous has free communication with the deep system through the deep fascia. It also communicates freely with the external saphenous in the foot and leg. The external saphenous has but one important branch; it is given off just before the parent vein empties into the popliteal and, after turning around the inner border of the thigh, anastomoses with a large branch of the internal saphenous to form a well-marked connection between the two larger veins. It frequently shows a varicose condition.

The external saphenous has from six to twelve valves, and the internal from eight to twenty. This is a most important arrangement. Under normal conditions the blood pressure in the veins is distributed in such a way that at any given point of the vein wall the pressure is only that caused by the weight of the blood column between it and the next higher valve. With incompetent valves the story is quite different. Above Poupart's ligament there is no valve in the femoral, external iliac or inferior cava veins; hence there is nothing to prevent the pressure of the blood in these vessels from being communicated to the internal saphenous, and the latter must sustain the weight of the blood column between itself and the heart. This is a relatively small matter, when the valves of the vein are for any reason incompetent.

The etiology of varicose veins is obscure. Most of the so-called causes are really neither primary nor originating; they are simply exciting or aggravating agents. Many cases, indeed, are seen in which are present none of the conditions ordinarily mentioned as causes. The affection, as seen in our out-patient clinics, is most common in patients in the third and fourth decades of life. It must be remembered, however, that these patients seek aid not at the first appearance of symptoms, not when the varicose condition is first noticed, but only when it becomes troublesome. Kennedy [1] in his report of 27 cases informs us that in no fewer than 6 the varicosity appeared at the age of ten or earlier, and that in 11 cases it was noticed between the tenth and the twentieth years. Such facts give credibility to the opinion of Bennett,[2] who calls attention to the frequent early appearance of the condition and maintains that the most probable cause is a congenital defect by reason of which the valves are not normally competent; this incompetency of the valves, says Schambacher,[3] exists because of congenital weakness of the vessel wall, due to their regular development and arrangement of its elastic and muscular elements. The probability of a congenital etiological factor is further increased by the fact that the condition may exist in both extremities at the same time or in either alone. Of 864 cases, including those of Bennett, Miller, Goerlich and the Carney Hospital series, both extremities were affected in 414, the left alone in 252, and the right alone in 198. Heredity, too, is said to have an etiological influence. There is, moreover, a relatively small group of cases — the "inflammatory" of Miller,[4] — in which a pretty definite relation can be established between the varicose condition and a preceding phlebitis, consequent upon pregnancy, typhoid, erysipelas, pneumonia, etc. Of Miller's 128 cases 40 are classified under this head. Trauma is unquestionably a frequent, exciting cause.

Little need be said of the pathology. As we see the cases, the gross pathology is usually evident. The fundamental pathology rests on the facts that, whatever the cause may be, there exists stasis in the veins of the lower extremity, that the valves are incompetent, and that the veins most often affected run in the subcutaneous fat where there is but little resistance offered to their dilatation. With the late pathology, the simple phlebitis, the organized phlebitis, the periphlebitis, the ulceration, the eczema, etc., we are all familiar.

The symptoms vary in severity. Some cases are subjectively symptomless; in many, on the other hand, the symptoms are so severe as to seriously cripple or even incapacitate the patient; the former seldom present themselves for treatment; of the latter, many examples are seen.

What does surgery of the present day offer in the way of radical treatment? How much hope of permanent cure can we promise these cases? Though numerous operative procedures have been

* Read before The Massachusetts Medical Society, June 11, 1907.

proposed for its relief, those in use to-day have as their foundations one of the following methods: (1) The Trendelenburg, (2) the Schede, or (3) the Madelung. These operations, modified or combined, are conceded to be the most effective of all.

1. Trendelenburg [5] in 1890 published his method of division of the internal saphenous between ligatures close to the saphenous opening. This prevents the transmission of the weight of the blood column in the femoral, iliac and inferior cava veins down to the internal saphenous with its incompetent valves. The procedure has been modified, and now excision of about two inches of the vein is practised instead of simple ligation. While there can be no doubt that in many, especially the early, cases, his method gave good results, yet recurrences have been reported in percentages varying from 6% (Remedi) [6] to 15 % (Faiszt) [6] and even 22% (Perthes).[6] Miller,[4] from a study of reported cases and of the Johns Hopkins Hospital series, concludes that the cures average about 75%. The percentage of recurrences increases with the length of time after operation, rising in the Johns Hopkins Hospital series from 11% to 37% from the fourth to the eighth year.

2. In the Schede [7] operation all veins superficial to the fascia are divided between ligatures, through an incision encircling the leg in its upper third. Von Wenzel,[6] a former pupil of Trendelenburg, modified the procedure by making a similar incision at the junction of the middle and lower thirds of the thigh and dividing the superficial veins at that level. A " horse-shoe " incision has also been used in place of the complete encircling incision. These operations attempt to attain their objects by forcing the blood to get out of the leg into the femoral vein by the way of the deep venous channels lying under the fascia. In a small series of 9 cases at Johns Hopkins, 67% had recurred at the end of ten years.

3. Madelung,[8] through a long incision from which the skin is turned back a hand's breadth on either side, excises practically the entire internal saphenous vein and a portion of its branches. Many modifications of this method have been offered, the chief ones being subcutaneous extirpation of the vein or excision of small portions throughout its length. Ninety per cent of cures is claimed for it.

The Trendelenburg operation is easy of performance and practically free from danger. But often it does not fulfill the conditions necessary for a radical cure. Two factors militate against its success and, in a way, against that of the Schede method. (*a*) First, the internal saphenous vein has free communication with the deep system and also with the external saphenous. This communication may play an important part in the prevention of a cure; for Bennett believes that varicosity, stasis, and consequent increased pressure in the deep veins, often coexists with a like condition in the superficial. It is evident that frequently in the Trendelenburg operation no barrier is offered to the transmission of this increased pressure and its effects to the superficial veins. In fact, consequent to this operation, enlarged veins either appear or, if present at the time, increase in size. We have noted that, even after extensive extirpating operations, some of the venous branches which were not removed have later become enlarged; this enlargement could take place only because of back pressure from the deep circulation. (*b*) The second factor in recurrence is that restoration of the superficial venous circulation sometimes takes place after ligation. (Miller,[4] Ledderhose,[9] Goerlich.[10]) This may occur in three ways: (1) by anastomosis around the scar, (2) by formation of varices in the scar, or (3) by union of the ligated stumps with formation of an intact vein. This is an interesting phase of the subject, but we cannot discuss it in a paper of this length.

Occasionally, though rarely, gangrene of the foot may follow the Schede procedure. Much more common sequelæ are edema of the leg and either hyperesthesia or anesthesia (more frequent) below the scar because of section of the subcutaneous nerves. Von Wenzel [6] claims that his operation is followed by no such ill results. In 3 cases reported by Georgi,[6] no anesthesia appeared, despite the fact that in all 3 operations he saw and preserved just one nerve filament. We have had no experience with the method, but beyond the fact that it shuts off the superficial venous circulation at a higher level than does the Schede, it seems to have nothing to recommend it over the latter.

The unmodified Madelung operation is seldom if ever done now. The long disfiguring scar and the extensive subcutaneous area necessarily exposed to the chance of infection were potent factors against it. But its principle is still effective and we believe that this operation, as modified by C. H. Mayo,[11] is the best single operation of the present time for varicose veins. This does not mean that the modified operation can be applied successfully to every case. On the contrary, there are many cases in which mere extirpation of the internal saphenous vein will not give a perfect cure; but it is nevertheless true that such extirpation must be the essential part of any successful operation for the relief of the condition.

As a preliminary step to any operation that has for its object the transference of the venous circulation from the superficial to the deep veins, it must be definitely established that there is neither thrombosis of the deep veins nor any marked impediment to the return of the blood through them. A history of a severe preceding phlebitis should arouse our suspicions. Mayo has adopted the diagnostic expedient of having doubtful cases wear an elastic stocking, or a bandage from the toes to the knee for a week. If this gives comfort to the patient and relieves the symptoms, it is assumed that the deep veins are sufficiently patent and the following operation is usually done:

The leg is held in an elevated and extended position by means of an ankle-support which is attached to an ordinary, upright, gynecological

standard. This position serves a double purpose; it checks hemorrhage and renders more accessible the field of operation. The internal saphenous is then divided between hemostats in the upper third of the thigh. The proximal end is ligated; the distal end is threaded into the ring of the enucleator and again grasped with a hemostat. The vein, put under moderate tension by a pull on the hemostat, is then extirpated subcutaneously by pushing the enucleator in the direction of the knee. When six to eight inches of the vein has thus been freed, the ring is pushed up against the skin from beneath, a short incision made down on to it, the vein grasped, the enucleator withdrawn, the freed length of vein pulled out through the short incision, rethreaded into the ring, and another length is then extirpated in a similar manner. This process is repeated until the vein has been removed down to a point four to six inches below the knee. The lateral branches are torn as met and usually do not bleed. Occasionally, however, there may be bothersome hemorrhage; this can be controlled by pressure with a gauze pad or by light tamponing of the incision from which it comes. If the main trunk breaks during the manipulation, pressure is applied over the point of rupture, a short incision is made lower down over the vein, the vessel divided between hemostats and extirpated from below upwards to the point of rupture. As a substitute for the enucleator, long forceps which form a ring at the end when closed are sometimes used. Occasionally torsion is employed for removing portions of veins, especially when we are dealing with branches. The external saphenous, when varicose, is also extirpated.

At the Carney Hospital my colleague, Dr. Munro, and I have operated on 57 cases of varicose veins in the last three and a half years. The method described above has been approximately the method used in the great majority of cases. Our experience has emphasized several features which, though unessential, are nevertheless worthy of note. We extirpate the internal saphenous to as low a level as possible. Mayo writes that his method is not always applicable, and that in about 10% of the cases either extirpation by the open method or subcutaneous extirpation by some other form of blunt dissection must be substituted for it. We have been led to the conclusion that such substitution must be made in considerably more than 10% of the cases. When the veins are brittle, when they are unusually thin, when the subject is very fat, when the veins are very large and thrombotic, when a considerable degree of periphlebitis is present, or when calcareous deposits have formed, the enucleator does not work well. However, we have yet to see the case in which at some stage of the operation the enucleator has not been of some service. In general, the instrument is more effective in the thigh than below the knee. In a considerable number of cases, especially when the veins are enlarged, thickened and thrombotic, the index finger has proved to be a very efficacious instrument for subcutaneous extirpation.

We have also found it wise, when a branch cannot be torn with the use of moderate force, to make a short incision down on to the enucleator at the point where the branch joins the main trunk, to unthread the latter and, after extirpating the branch as far as can be easily done, to ligate it and then to proceed with the removal of the main vessel. We make a point of ligating the main trunk very close to the saphenous opening and of tying any large branches entering the internal saphenous in the neighborhood.

Any mass of varicose veins, wherever in the lower extremity it may be located, is dissected free and removed. Usually such masses can be removed only through a moderately long incision. Portions of visibly enlarged veins in the leg other than the internal saphenous are also removed, even though at the time they may not show a varicose condition. If there are numerous visible venous channels coursing up the leg, even though the enlargement be only moderate, a partial Schede is done in addition to the usual operation; that is, a " horse-shoe " incision is made, extending perhaps half way around the leg in the upper third, and all superficial veins exposed by the incision are divided between ligatures. All this, of course, takes additional time, but we believe that it is time well spent. Following Mayo's advice, we avoid making incisions in and very close to the fold of the knee, because of the danger of keloid formation in that locality.

All incisions are closed by lock sutures of horsehair and covered with collodion dressings. It is our practice to close the incision through which the internal saphenous is first tied just as soon as the first length of vein has been extirpated. This lessens the chance of infection. Ulcers are either excised and skin grafted or thoroughly curetted and allowed to heal by granulation. Mayo [11] describes an ingenious way of dressing these ulcers and grafts so that their progress may be observed without disturbing the dressing of the whole limb. Eczematous areas are painted with compound tincture of benzoin. Superficial abrasions are wiped with tincture of iodine before proceeding with the operation. Finally, the lower extremity is wrapped in gauze, a bandage is applied from the toes to the groin and around the abdomen in the form of a spica; the patient is put to bed with the leg elevated on a pillow. The duration of the stay in bed averages about two weeks. After leaving the hospital the patient usually wears a bandage from toes to knee three to four months.

The gist of the whole matter is that, while removal of the major portion of the internal saphenous vein is the essential part of the operation, other procedures must be added suited to the conditions of each case.

Subcutaneous extirpation is by no means a recent operation. Narath [12] gives a most interesting historical account of the various operative procedures for the treatment of varicose veins. Subcutaneous extirpation was first described by Oribasius (325–403 A.D.). It is thus about fifteen hundred years old. It fell into disuse in the later

Middle Ages and was revived again after the advent of antisepsis.

The operation is not entirely without danger. Embolism, particularly of the lungs, has followed it several times. Goerlich [10] mentions 6 cases: Miller [4] describes a probable case occurring in the Johns Hopkins series, and mentions another reported by Sylvester. It has followed both simple and extensive operations, but fortunately is very rare. As yet, we have not met with it at the Carney. The other danger is sepsis. Some degree of it is difficult to avoid because of the presence of eczema or ulceration in many of the cases. We have once seen severe, post-operative erysipelatous inflammation of the leg. Fortunately it was not fatal, but the patient was seriously ill for some days.

In our series of 57 cases we have done the so-called Mayo operation 46 times. We know the present condition in 28 of these patients; 24 of them are perfectly well; in 3 the result is fair and can, I think, be made perfect by extirpation of some of the smaller veins which, though not particularly enlarged at the time of operation, have become so in the meantime. The fact that this post-operative enlargement has occurred in these smaller veins has caused us to become more and more radical in our primary operative procedures and to make them more extensive.

Our only really poor result is in a woman who now has a rather marked edema and more or less constant dull pain in both legs. We believe the failure in this case to be due to the fact that we operated before we were certain that there was no obstruction to the return of the blood in the deep veins; for there can be no doubt that in this case there was and is a partially obstructed deep venous circulation. With our present knowledge operation would not have been advised.

We have done the Trendelenburg operation, modified and unmodified, in 12 instances. Of the 6 patients whose present condition we know, 3 are well; 3 others showed recurrence, 2 of whom have been cured by the modified Mayo procedure.

We have done the Schede operation twice and excision of portions of the internal saphenous twice. The post-operative history of these cases is unknown to us.

As we have previously stated, recurrences are said to increase in number as the post-operative period lengthens in duration. This applied, however, only to the result of the Trendelenburg and Schede operations. With us so-called recurrences after the Mayo operation, when they have come at all, have appeared within the first six months of the post-operative period. Of course, our work has covered a period of only three and a half years, and it may be said that so short a lapse of time does not permit of our speaking of results with definite assurance; but we believe that after the operation as we now practise it a recurrence, as such, cannot take place. Some of the remaining branches may enlarge and, perhaps, even become varicose, but re-establishment of the superficial venous circulation is impossible. We feel that, in properly selected cases, both a subjective and an objective cure may be promised in practically all instances, and that examining surgeons for police and fire boards can now have no sound reason for rejecting as candidates, for either the police or fire departments, men who have undergone operation for varicose veins and remain well for a year thereafter.

To sum up in brief:

1. The important etiological factor is a congenital one; in a small proportion of cases it is inflammatory.

2. The operation that will give the best results must have as its essential feature extirpation of the internal saphenous vein; but to this such other procedures must be added as are suitable to each individual case.

3. Before operative measures are undertaken it must be demonstrated that the deep venous circulation of the lower extemity is not obstructed to any marked degree.

4. In properly selected cases it is believed that a permanent cure may be promised.

5. The operation is almost but not entirely free from danger.

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DISCUSSION.

DR. G. H. MONKS, of Boston: The subject has been so thoroughly presented by Dr. Bottomley that little remains to be added. The number of cases of varicose veins which come to operation is constantly increasing. Whereas years ago comparatively few cases were submitted to operation, at the present time cases of varicose veins form an appreciable proportion of the total number of operations in a general surgical clinic. This, of course, is for the reason that, by improved technique, including among other things a more extensive removal of the veins than was formerly practised, surgeons are getting better and better results and the cases where operation is contra-indicated are getting fewer and fewer.

I quite agree with Dr. Bottomley that the best single operation of the three of which he has spoken is the Madelung operation, or one of its modifications; it has been so satisfactory to me that I have used it exclusively in the 26 cases which I found after a rather hasty search through my records. The other two operations, the Trendelenburg and the Schede,do not appeal to me. I might think differently should I use them, but, to my mind, the Trendelenburg does not seem radical enough, and the Schede runs too much risk of being followed by unpleasant results caused by division of the veins.

I think it is well to emphasize the importance, on account of its probably lessening the danger of embolism, of working from above downwards rather than in the opposite direction. This method of procedure has also the advantage of enabling the operator to dissect the various branches most effectively.

Dr. Bottomley should be thanked for having brought to the notice of the profession this report which shows

how much can be accomplished by means of the latest methods of operating.

Dr. J. B. Blake, of Boston: There are two aspects of the operation for varicose veins, which are worthy of a few words. Although the operation seems to be one of the simplest in surgery, its field being superficial to the deep fascia, it is nevertheless not without its dangers. Of these sepsis is the most important, and it may be so severe as not only to ruin the operative result, but also endanger the patient's life. Simple though the operation is, the patient's general condition must be considered just as thoroughly as the local lesion. Failure to include this element of risk was, I believe, the determining factor in the following case, the only fatal outcome of an operation for the relief of varicose veins that is recorded in Boston. The patient was an old, feeble woman, operated on by a young doctor who had recently finished the duties of surgical house officer in a Boston hospital. There was an open ulcer, as well as an extreme degree of varicosity, threatening rupture and hemorrhage. The operation was a local dissection. Immediate phlebitis supervened; the patient was sent to a hospital, where in spite of every effort, toxemia and death followed within a week. Aseptic precautions were taken at the time of operation as a matter of course, but the patient was operated on in her own home. A longer preparation, increased attention to improving her general condition, would undoubtedly have averted this disaster. It seems worth while drawing attention to this single case, as at present every one seems to be doing surgery, at all times, under all conditions and upon all sorts of surgical risks. Necessarily, some patients suffer, and from causes that are not legitimately essential to modern surgery.

The other aspect of the operation is the precise reverse of the foregoing: in patients whose general condition is satisfactory, but who have large and slowly healing chronic ulcers, it is not always necessary to postpone the operation until these ulcers heal, even though a considerable portion of the operative field lies in immediate proximity to the ulcer. If unusual care is taken in cleansing the skin, and the ulcer be entirely and permanently shut off from the rest of the leg by a special dressing, applied before the anesthetic is administered, and later covered by the sterile sheets, the operation may proceed to within one centimeter of this dressing with perfect safety. This is, of course, intended to apply only to patients in hospitals, or under ideal home conditions; but both Drs. Cotton and Blake have had several such cases in the past two years, in which the operative result was as good as if no ulcer was present. As a rule, the ulcer heals more rapidly after the operation.

RECTAL ANESTHESIA.

BY JOHN H. CUNNINGHAM, JR., M.D.,
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The frequent inquiries regarding the method of rectal anesthesia since its demonstration at the meeting of The American Medical Association, June, 1906, leads to a further report upon the subject.

Since the first publication [1] the method has been more thoroughly tried, and while the general conclusions drawn at that time remain the same, experience has established certain new features. It is not my desire to give detailed reports of cases which have done well, but rather to refer to the technique, mention the cases of special significance and to refer to the work of other men whom I happen to know have used the method and to express their impressions. The following details of technique were published in the original article:

History. — The first mention of producing ether narcosis by the rectum appears in Pirogoff's book on etherization, published in 1847 in St. Petersburg. About the same time Roux [2] made experiments upon the subject, as did Vincente y' Yhedo and Marc Duprey, employing injections of ether pure and mixed with water. Their observations, although demonstrating the practicability of this method of producing complete anesthesia, excited little interest.

No mention of the practice appears again until 1884, when Molliere,[3] following the suggestion of Dr. Alex Yversen, of Copenhagen, employed the method at l'Hôtel Dieu de Lyon and established its merit. His experiments were made with a simple apparatus similar to that employed by the earlier investigators. It consisted of a large bottle almost filled with ether from which a tube conducted the vapor to the rectum. The bottle was placed in a water bath which had a temperature greater than the boiling point of ether. By this means the ether was made to boil, and by its own volatile expansion was carried over into the rectum. Molliere produced complete anesthesia in from ten to twenty minutes, and used only a small quantity of ether (10 gm.) in so doing. Unlike the results of Pirogoff's and Roux's experiments, those of Molliere created considerable interest, and several surgeons practised the method with variable results.

Hunter [4] reports six cases which he summarizes as follows: "The method in question promises, in my opinion, to effect a radical improvement in the method of administering ether. A striking feature is the small quantity of ether required, showing how large a quantity is commonly wasted. The absence of any unpleasant sensations on the part of the patient is a matter of no small importance. The rapidity with which anesthesia can be induced and the general absence of struggling and opposition by the patient give the rectal method a decided value, even if it should be used only as a preliminary step to the usual method." Hunter makes no reference to diarrhea or other ill effects being produced by the employment of this method.

Weir [5] mentions seven cases where rectal etherization was employed by Dr. William T. Bull with the result that nearly all had bloody or simple diarrhea following, and that one case became collapsed afterward. He also cites two cases of his own. One was a boy fourteen years of age who received rectal ether for fifteen minutes, and although he became sleepy and the breathing stertorous, sensibility was not completely lost and etherization in the ordinary way became necessary. His other case was a robust child of eight months, upon which he operated

[1] Bost. Med. and Surg. Jour., April 20, 1905.

[2] Jour. de l'Académie des Sciences, xviii, 47, p. 146.
[3] Lyon Med., 1884, xlv, p. 419.
[4] New York Med. Rec., 1884, xxv, p. 507.
[5] *Ibid.*, 1884, xxv, p. 508.

for hare lip. The child was fully anesthetized in three minutes and the operation completed successfully. The amount of ether used was in all less than two ounces. The child was "somewhat depressed" at the end of the operation, but rallied under stimulation and heat. During the night it had several bloody movements and died the following morning.

Wanscher [6] records twenty-two cases anesthetized by injecting ether vapor into the rectum after the method suggested by Pirogoff, and speaks in most favorable terms regarding his results. He mentions one especially noteworthy case which explains the occasional difficulty in producing narcosis by the rectal method. In this case he gave rectal ether for between thirty and forty-five minutes with no result. Knowing that the patient's bowels had not been properly cleaned out he postponed the operation, emptied the bowel and rectum of its contents and the following day repeated the etherization. The patient was completely etherized in thirteen minutes. There are several cases in our series that corroborate this observation, and it might be said that difficulties in rectal etherization arise only from failure to have the bowel clean.

Post,[7] reports three cases etherized at the Boston City Hospital by the rectal method. The first case was a man with cellulitis of the arm, with general toxic symptoms. He was completely anesthetized in thirteen and a half minutes. The ether was then discontinued and complete anesthesia continued for nearly a half hour. Several hours later he had two loose movements which contained much gas. A starch and opium enema was given and no further diarrhea resulted. The second case was one which came to the hospital after having eaten a hearty breakfast. The patient received rectal ether for thirty-four minutes, at which time she was completely anesthetized, one and three quarters ounces of ether being used. During the etherization the abdomen became slightly distended and the gas was expelled by abdominal pressure. The patient vomited about an ounce of fluid once, following the ether. There was a normal movement from the bowel about one hour later and subsequently two slightly loose movements, one of which was tinged with blood. The third case was one with hemorrhoids. Etherization was complete in fifteen minutes and a little less than two ounces of ether was used. There was no vomiting or diarrhea following the etherization.

Hewett, in his book, "Anesthetics and Their Uses," 1901, speaks of the early work of Alex Yversen and Molliere and the cases of Weir and Bull. He mentions Dr. Buxton's preference for rectal etherization in operations upon the upper extremity. He makes no statement that leads one to believe that he has had any personal experience with this method of ether administration.

Buxton, in his book on "Anesthetics," 1900, states that he has employed the method "pretty extensively," and strongly advocates its use in operations about the head and neck and for empyema.

Advantages. — It is obvious that a free and continuous access to the field of operation is a great advantage to the surgeon. In operations upon the head, face, mouth, nose, throat, ear, eye and neck the absence of the ether cone not only lessens the technical difficulties of the operation, but also minimizes the chances of sepsis and lessens considerably the time necessary to perform the operation.

Experience has shown that the patient passes under the influence of the drug rapidly and with no sense of suffocation; that less ether is used, not only in producing the narcosis, but also in maintaining it; that the stage of excitement is lessened or absent; that the ether recovery is more rapid, and that the disagreeable after-effects of inhalation ether narcosis are diminished or absent. It is also noteworthy that alcoholics pass through the stage of excitement with little, if any, resistance or struggling.

The employment of this method of etherization in diseases of the lungs, especially tuberculosis, abscess and pneumonia, immediately suggests itself. The same might also be said of empyema, mediastinal abscesses and new growths.

Although it is true that the greater part of the ether is eliminated through the lungs as in inhalation narcosis, the direct irritation of the concentrated vapor is overcome, and post-operative pneumonia should be lessened.

The absence of bronchial secretions in the cases has been a striking feature.

As has already been pointed out by Dr. Wanscher, the patients that have taken ether by inhalation and by rectum express a preference for the rectal method, the chief explanation being that the convalescence is easier.

Disadvantages. — To say that this method has no disadvantages in view of the fact that it has lain idle for a period of twenty years seems startling. By the old method of administration there were distinct disadvantages which warranted the discarding of this method of ether administration. These were rectal disturbances, and the inability to control the stages of narcosis.

It has been claimed by some that ether narcosis by rectum produces diarrhea and melena. This may be easily explained when we consider the old method of administration, which was to place a bottle of ether in a boiling water bath and allow the vapor to be carried over into the rectum by its own expansion. By this method there was no means of appreciating the amount of ether passing into the rectum, and the ether going over at a high temperature was condensed in the tube and rectum.

To overcome these two objectionable features, the illustrated apparatus has been employed. In my own series of cases there has been no diarrhea or bloody stools, the bowels being rather constipated than otherwise. In those patients who were properly prepared the bowels have moved for the first time on the third to the fifth day. It has been suggested that this absence of rectal

[6] Cong. Internat. Med. Sciences, 1884, ii, p. 186, sect. 1.
[7] BOST. MED. AND SURG. JOUR., 1884, cx, p. 442.

irritation may be due to the better quality of ether now in use, as well as to our method of administration.

Colicky pains and painful distention mentioned by Buxton as after-effects have been noted in a few cases. Pain has been so slight and has passed off in so short a time that it can hardly be considered a disadvantage. This pain has been noted more particularly in those cases not properly prepared.

It is not desirable to employ this method in abdominal cases on account of the distention, but there seems to be no reason why it should not be employed to produce narcosis preliminary to the administration of ether by mouth, especially if the patient is known to take ether badly.

Technique. — To obtain the best results it is essential that the bowels should be thoroughly cleaned out. It has been our custom to give two ounces of a saturated solution of magnesium sulphate on the evening before operation, and early the following morning a large suds enema. Just before going to the operating table another similar enema is given.

The ether breakfast has consisted of two ounces of beef tea.

Apparatus. — We began our experiments with a wash-bottle six inches in height and two and a half inches in diameter. Of the height four inches was used for ether space and two inches for vapor space. A simple straight glass tube led to the bottom of the bottle and was connected with the afferent tube. The efferent tube, leading to the rectum is connected with a glass tube, the proximal end of which was flush with the inner surface of the rubber stopper. This was a satisfactory apparatus except that the bottle did not hold enough ether without refilling during a long operation. Later, we tried an apparatus in which the wash-bottle was twelve inches in height and one and a half inches in diameter, allowing a nine-inch column of ether for the bubbles to ascend through. This was discarded as it was difficult to keep the apparatus right side up, and the small amount of ether used rapidly cut down the height of the column, owing to its small diameter.

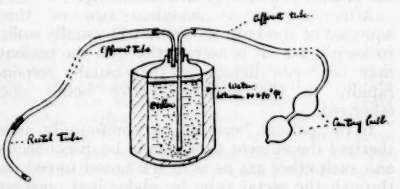
Later the Davidson apparatus, which is used to administer warm ether vapor through a hard rubber tube in the corner of the mouth, was tried, being attached to the rectal tube, and was discarded because of the foot pump and the stop-valve in the efferent tube, the foot-pump filling the bag which caused a constant flow of ether when the stop-valve was opened. In administering the anesthetic in this way it is impossible to appreciate as accurately the amount of ether being given as with the bulb method about to be described.

The apparatus which we have used on all our later cases and which has been the most satisfactory consists of a bottle, the body of which is seven and a half inches in height, five inches being used for ether space, two and a half inches and the neck for vapor space. The diameter is four inches and the capacity on the ether space twenty-nine ounces, so that a large amount of ether may be used without materially lowering the ether column. The afferent tube which leads to the bottom of the ether column ends in a bulb with several small perforations so that the air ascends in several small bubbles. The stopper and the connections should be tight.

The bottle is placed in a water bath at a temperature of between 80° and 90° F. Ether boils at 98.6° F. It is desirable to keep the temperature below this point. By keeping the ether as warm as possible without boiling, the air forced in by the bulb is more easily saturated. If the operation is a long one it may be desirable to renew the temperature of the bath. We have employed all makes of ether and the results have been the same. The inexpensive ether has been quite as satisfactory as the most expensive.

The efferent tube should be sufficiently long to allow moving the wash-bottle away in case the operator wishes to change his position from one side of the table to the other. We have tried efferent tubes of varying lengths and have noticed no difference in the results; ether in no case being condensed in the efferent tube.

The afferent tube should be of sufficient length to allow the etherizer to inspect the patient from head to foot still retaining the bulb in hand. We have not found it necessary to employ an "interseptor" as no ether is condensed in the tube.



We have tried rectal tubes with eyes placed at various intervals; but these have had no advantage over the stiff rectal tube with a single eye at the end, and do have the disadvantage of kinking more easily on account of the eyes weakening the tube.

Administration. — The patient lies upon the back with the legs held in slight flexion by a sandbag placed under the thigh. A stiff, large-sized catheter or rectal tube is inserted into the rectum for a distance of from ten to fourteen inches. When there is difficulty in placing the tube because of kinking a bougie is introduced into the tube and withdrawn after the tube is in place. The efferent tube is now connected with the rectal tube and the vapor forced in until considerable gas is pressed around the rectal tube. Keeping the forefinger in the rectum beside the tube, unless it causes the patient pain, hastens the expulsion of the rectal gases.

It is essential that the rectum be distended to the point of emptying itself around the tube, for we have learned that without first removing the

gas normally in the bowel the patient absorbs the ether much more slowly, presumably because of the dilution of the ether gas by the gases normally in the gut. After this gas has been expelled the ether should be forced in by a few squeezes of the bulb every five or ten seconds, or until it is expelled about the tube. A little experience with the method will enable one to keep the proper amount of ether gas in the rectum without its being expelled around the tube.

At the first introduction of the rectal tube, or the first volume of ether, the patient may feel a natural discomfort and desire to defecate; but in a short time this sensation disappears. The breath becomes ether laden in from one to five minutes after the ether is started. The patient gradually becomes drowsy, the breathing stertorous and he then passes into complete surgical narcosis without any stage of excitement.

Narcosis being complete, the same signs regarding the patient's condition should guide the anesthetist as in administering ether by inhalation.

Care should be exercised after complete narcosis has taken place to see that the jaw does not drop down allowing the tongue to fall back over the larynx. In one of our early cases the patient became partially asphyxiated through neglecting this precaution. When the jaw was drawn forward the natural color returned to the face and the patient began to breathe normally.

After narcosis is complete two or three squeezes of the bulb a minute will usually suffice to keep it so. It is noteworthy that the patients may be "run light," as they usually respond rapidly to the injections after being once etherized.

If the patient becomes too profoundly anesthetized the efferent tube should be disconnected and such ether gas as is in the bowel forced out through the rectal tube by abdominal massage. An oxygen tank should be connected with the rectal tube and this gas made to distend the bowel. Artificial respiration and stimulation should be resorted to in the usual manner. When the operation is complete it has been our custom to expel as much of the gas ether as possible by massage of the abdomen with the rectal tube still in position.

POINTS OF INTEREST REGARDING THE METHOD.

Briefly summarized, the points of interest are as follows: There is comparatively little ether used. There is no stage of excitement. Vomiting seldom occurs. Bronchial secretions are absent. There is a comparatively quick ether recovery. The bowels are slightly constipated. Unless the bowel is free from feces it is difficult to produce narcosis.

Before considering these points in detail it is necessary to allude to the law of partial tension, upon which the physiology of ether narcosis is based.

The law of partial tension. — When ether or almost any other gas (excepting oxygen) is inhaled, it passes through the walls of the alveoli into the blood circulation until the blood circulation contains the same quantity of the gas as the air in the alveoli. When the percentage of the gas is decreased in the air of the alveoli by respiration, then the gas will pass back from the blood into the air in the alveoli until the air of the alveoli contains the same percentage of the gas as the blood.

The physiology of ether narcosis by rectal administration. — There is no reason to believe that the law of partial tension holds true when ether is administered by the rectum, nor is there any known scientific explanation of the phenomenon of ether narcosis produced by this method of administration.

A theory advanced by Dr. M. Vejux-Tyrode, of the Pharmacological Department of the Harvard Medical School, who was kind enough to study our cases, is briefly as follows:

First, a definite per cent of ether must be present in the entire circulation to produce complete surgical anesthesia. In human beings this amounts to a little under six volumes per cent. The rapidity with which complete narcosis results depends upon the rapidity with which the percentage of ether is brought up to nearly six volumes per cent. When ether is given by the lungs in the form of vapors it can only be administered in great dilution unless excretion be interfered with, and the percentage in the blood be raised above six volumes per cent, which would prove fatal by paralysis of the respiratory center in the medulla. On the other hand, when ether is administered by the rectum as a vapor, concentrated vapors may be given. Therefore, the chances for the rapidity of absorption and the raising of the required six volumes per cent will take place more rapidly while excretion may take place freely from the lungs.

This is an explanation for the rapidity with which certain of our cases have become anesthetized.

Fatality is less likely to result as the lung is free to eliminate ether as fast as it is absorbed from the rectum.

The fact that comparatively little ether is used in producing and maintaining anesthesia by the rectal method is evident when we realize that all the ether used is absorbed.

There is no stage of excitement, because of the rapidity with which the patient passes through the first stage of ether narcosis. We know, of course, that the absorption of ether at first depresses the co-ordination centers of the cerebrum, next the other parts of the cerebrum, consciousness and sensibility to pain, which takes place simultaneously with paralysis of the cord. This latter stage is that of surgical narcosis. The third stage, the undesirable one, is paralysis of the respiratory and vasomotor centers in the medulla. This does not seem to take place, probably because the lung acts as a safety-valve, preventing the raising of the amount of ether in the blood to six volumes per cent.

Vomiting has occurred in a few cases, but has been infrequent and has occurred chiefly in those cases who received ether by mouth preliminary to the rectal method. The patients who have vomited have done so but once or twice, and individuals who have had much vomiting following inhalation narcosis have vomited but once or twice or not at all.

There are two theories offered to explain the vomiting which usually follows ether narcosis. One, stimulation of the vomiting center, just as with apomorphine. The other, a reflex stimulation due to the local irritant action of the swallowed ether-laden saliva on the mucosa of the stomach.

Our experiments are rather in favor of the latter theory because we obviate to a considerable extent the swallowing of ether-laden saliva, and the cases etherized entirely by the rectal method failed in the great majority of cases to show vomiting as an after-effect. If the former theory were true there is no reason to expect any difference in the amount of vomiting between the two methods of administration, as the same amount of ether must necessarily reach the central nervous system.

The increased amount of *secretions* by inhalation narcosis takes place from local irritation to the upper respiratory air passages. In rectal anesthesia only the necessary ether for narcosis which is excreted by the lungs goes through the respiratory tract, a quantity probably much less than goes through the respiratory passages during inhalation narcosis.

The rapid ether recovery seems to the writer to depend upon two separate factors; first, all the ether in the gut is removed at the time when the anesthetic is discontinued, leaving only that ether which is in the blood circulation to be eliminated. There is no remaining excess as there is in the alveoli. Secondly, the lung has not been impaired in its excretory power as it must be by the tidal flow of concentrated ether vapor in inhalation narcosis.

The fact that *the bowel is inclined to be constipated* may be explained simply by the fact that the bowel has been thoroughly cleaned out before operation and that subsequently the patient has been kept on a light diet. It may be due, however, to over-distention of the gut whereby the smooth muscle fibers of the intestine are made atonic.

The difficulty in producing narcosis in those patients with fecal matter in the rectum is dependent upon two factors. First, absorption cannot take place readily; and secondly, the fecal matter repeatedly plugs the lumen of the tube.

CONSIDERATION OF THE IMPORTANT CASES.

In considering the cases which have been anesthetized by the rectal method, it has been the writer's desire to determine whether or not complications occur more frequently than by inhalation narcosis. An attempt has also been made to learn the experience of men who have employed the method in hopes of determining possible limitations of the method in the hands of those not especially familiar with the technique.

No mention will be made of any case which does not present significant features; and the consideration is here limited to the fatal cases, those presenting complications, and the cases presenting features which illustrate the value of this form of ether administration, in hopes of getting a correct prospective and placing the method in its proper place. I wish to express my thanks to the gentlemen who have helped to make this possible by kindly placing the records of their cases at my disposal.

In my own series of cases, there have been two deaths, one a blind boy six years old, with constitutional tuberculosis and on whom a prolonged operation was performed for extensive tuberculosis adenitis. No criticism could be made of the manner in which the ether was administered and no better narcosis could have been wished. During the latter part of the operation, the patient's condition became bad, the picture being that of surgical shock so commonly seen as a result of a prolonged and severe operation. The patient failed to rally under stimulants and died. It is only fair to state that, had the patient been etherized by inhalation, the operation would have been of even longer duration, and it is believed by those present that the ultimate result would have been the same.

The other fatal case was in a woman sixty-three years old, etherized for Dr. Peer P. Johnson, of Beverly, Mass., who performed an operation for cancer of the neck. The patient was under ether over two hours, and at the completion of the operation was in poor condition. The patient never rallied from the operation and died twenty-four hours later. Previous to death, she had several fecal and gaseous movements. While the first impulse would naturally be to blame the novel method of anesthesia, it will be readily admitted that it is not unusual to have an aged patient die, as did this one, by imposing too great a tax upon an aged individual by a severe and prolonged operation.

Another fatal case occurring after rectal anesthesia was a patient of Dr. J. B. Eagleson, of Seattle, Wash. Being in Seattle at the time, I learned the details of the case. The patient was a child about two years old who was operated upon a second time to perform a succeeding step in the repair of a harelip and a cleft palate. At the first operation, ether was administered by inhalation. Following the operation the child presented symptoms of acetonuria and nearly died. At the second operation, rectal ether was given. The narcosis was satisfactory in every way. The patient made a rapid ether recovery and was normal in every respect for two days following the operation. At this time the patient became drowsy, sank into coma, had convulsions and presented the typical picture of acetonuria, as following the previous operation. The patient died about twenty-four hours later, three days after operation. The nurse was the same one that cared for the child at the previous operation, and she could see no difference in the symptoms subsequent to each operation except that the symptoms came on earlier after the first operation. There were no bloody stools or diarrhea and the patient had been on the floor playing with the other children the day following the operation. While acetone was not sought for in the urine, the quick ether recovery and normal condition existing for forty-eight hours and the chain of symptoms follow-

ing in one who had presented the same symptoms after a previous etherization, leave little doubt as to the real cause of death.

Dr. Freeman Allen, anesthetist to the Massachusetts General Hospital, has kindly placed at my disposal the records of thirteen cases anesthetized by him with this method.

Dr. Allen's first case was a patient with an enormous keloid growth obscuring the mouth as well as the rest of the face, operated upon by Dr. Arthur T. Cabot. Dr. Allen's remarks about this case are as follows: "The patient went under quickly." "Absolutely no inconvenience of any kind during operation." "No diarrhea or intestinal symptoms."

This patient underwent a second more extensive operation by Dr. C. A. Porter. Rectal anesthesia was employed and was highly satisfactory.

Dr. Allen's fourth case is of special importance. This patient was recovering from a lobar pneumonia when there developed a mastoiditis with resulting abscess of the neck. The patient's general condition was poor. At the Boston Eye and Ear Infirmary, the late Dr. Walter Lecompte operating, Dr. Allen administered rectal ether for an hour. Dr. Allen's remarks about the case are as follows: "The patient went under in a very striking manner, the odor being soon perceptible on the breath and being obviously intoxicated by ether in three or four minutes." "He remained in perfect control and in excellent condition during operation." The patient recovered. It is unnecessary to more than allude to the value of administering ether by rectum in cases with pneumonia, or other inflammatory conditions of the lungs.

Dr. Allen's seventh case was a patient sixty-five years of age, operated upon by Dr. G. W. W. Brewster for an extensive carcinomatous growth of the superior maxilla, which plugged the nose. The patient died. Dr. Allen's note is as follows: "Patient made a perfect ether recovery, but died about thirty-six hours later of shock."

Dr. Allen's thirteenth case was an elderly man, weighing 230 lb., who was operated upon by Dr. Samuel J. Mixter, for carcinoma of the lip and submaxillary region. This patient was given anesthol for three minutes and ether by inhalation for five minutes, when the rectal ether was begun and continued for forty minutes, seven ounces being used. The respiration was stertorous and bad throughout, the patient being cyanotic. At the end of operation, the pulse was 100 and of poor quality. There was no vomiting and the patient regained consciousness in about two hours, although the quality of the pulse remained bad. During the following four hours the patient had six or eight blood-colored watery movements, without pain or gas and without clotted blood. Dr. John M. Little, Jr., Dr. Mixter's assistant, cared for the patient until his death, twenty-four hours later. Dr. Little states that the patient's condition was not good at any time after the operation; that there was not enough blood in the stools to cause death, and it is his belief that the patient died of surgical shock.

Of Dr. Allen's cases, there were four not perfectly prepared for rectal anesthesia. One case, however, went satisfactorily, but in the other three, narcosis by inhalation had to be resorted to in order to get the patient under. Two of these unprepared cases had diarrhea. In one the movements were watery; in the other the discharge was bloody, without pain, tenesmus or any discomfort. It lasted three days. Vomiting occurred in five cases. Two cases vomited once only, one twice, another three times, all small amounts; but in another case the vomiting was considerable.

Dr. Frederick Coggeshall performed a trachelorrhaphy and perineorrhaphy followed by a laparotomy for resection of the ovaries, and a Gillian's operation for retroversion in a patient who had suffered severely from vomiting following three previous ether narcoses by inhalation. The frightful vomiting resulting from the previous etherization was the only reason for employing the rectal method. The presence of the rectal tube near the field of operation was objectionable, and when the abdomen was opened, the intestines were distended so that the intra-abdominal operation was made more difficult and inhalation narcosis was then substituted. Dr. Coggeshall's impression of the case is as follows:

"In this case the patient had taken ether several times before with great difficulty and great distress, and had suffered excessively in coming out of it. She was an extremely neurotic woman. Although during the latter part of the operation the rectal etherization was abandoned for the ordinary method on account of the distention of the bowel, most of it, if I remember rightly, was performed under rectal ether. Although this was a much more severe operation than any which she had previously undergone, and although her nervous condition was worse at the time than it had been at any time before, the patient stated afterwards that she was less uncomfortable, both in taking the ether and from its after-effects, than on either of the three previous occasions on which she had been operated upon. She vomited only once instead of doing so steadily for from twenty-four to forty-eight hours as she expected. The bowels moved of their own accord within twelve hours."

A second case performed by Dr. Coggeshall is also worthy of mention because, although the bowels were not properly prepared, the narcosis was satisfactory, and as it also illustrates that one not experienced with the method can employ it satisfactorily. Dr. Coggeshall's impressions regarding this case are as follows:

"The second case was the removal of extensive glands in the neck from a girl of fourteen, in which the ether was administered throughout by rectum, by Dr. David Townsend. The bowel had not been very thoroughly cleaned out before, nevertheless the patient went under without any great difficulty, and the method was highly satisfactory both from the etherizer's and the operator's point of view. The amount of ether used was 100 gm. can of Squibb's, and I think that this was not quite emptied. There was no vomiting afterwards; the bowels moved of their own accord within twelve hours."

"I should go even further, and be very much inclined to try it again, at least, for purposes of getting the patient under the anesthetic in abdominal operations where the patient had had previous experience of great discomfort on going under and coming out of ether administered in the usual way. I might add, as indicating the method is not a difficult one to carry out, that Dr. Townsend had never used it before, and his only practical knowledge of the method was derived from being present on the occasion that you gave it for me; nevertheless, he was able to use it without the least difficulty arising from its novelty to him."

Dr. William C. Peters, of Bangor, Me., states: "I gave ether by rectum to only three cases, all abdominal." "It proved an easy and to the

patient a very satisfactory way to produce anesthesia." "There was no state of excitement." "The patients were a little disturbed at what seemed to them unusual methods, but reported no unpleasant sensations. In no case was it continued after the abdomen was opened on account of distention." "I have intended to try it again, selecting other than abdominal cases."

Dr. J. A. Stucky, of Lexington, Ky.,[8] reported four cases in which he had employed rectal anesthesia and speaks in favorable terms regarding it. In a letter to me Dr. Stucky states, "I find it hard to overcome professional prejudice against the method, but I am so pleased with it I propose to continue it."

In stating the unsatisfactory features where they have existed, it seems important to remark that these unpleasant occurrences are all that have come to light during the use of the method for the past three years.

The method has presented no dangers other than those common to any form of complete narcosis, except in Dr. Allen's fatal case, where the passage of blood by rectum resulted. Dr. Allen feels that the water bath was at a temperature higher than the boiling point of ether, and that ether itself was forced into the gut, to which fact he attributes the bloody stools.

The unfavorable cases cited show that the same dangers are present in administration of ether by rectum as by inhalation, but it is not evident that they occur in any greater frequency. The four cases of shock are consistent with the character of the patients and the nature of the operation; and the cases of acetonuria are no more unusual than the occasional existence of this condition after narcosis by the usual method.

There has been a surprisingly large number of cases in which the narcosis has been satisfactory, even when the bowels have not been prepared. All the cases, however, in which the method has failed have been those in which the bowel was not empty. Although many cases do well without preparation, the method cannot be expected to succeed under these circumstances, and if it is desirable to use rectal ether because of the nature of the case, it should be undertaken with little hope of success. Dr. Lumbar[9] states that the patient should be on a low diet for two or three days previous to operation, but I have not found this necessary. If the bowels can be emptied by the administration of magnesium sulphate the evening before operation and the lower bowel cleansed by a suds enema just before operation, this seems to be all that is necessary. In the recent cases, I have employed a "split" of Abelina water, which seems to empty the bowel satisfactorily without the griping so frequently associated with the use of magnesium sulphate.

I have had the opportunity of observing the amount of intestinal distention in four cases in which rectal ether has been administered. In each instance, the gas had passed the ileo-cecal valve and the small gut was inflated throughout its whole length. Dr. Peters has made the same observation in his cases.

It is possible that the odor of the ether upon the breath may be due to its extension along the gastro-intestinal tract and not to its elimination by the lung.

Dr. N. B. Leggett has employed the rectal method of producing anesthesia in twelve cases, on the services of Drs. Blake and Brewer at the Roosevelt Hospital, New York. The cases have been satisfactory in every way. Dr. Leggett has employed a Y glass tube for joining the efferent and rectal tubes together. By means of a small bit of rubber tubing fitted with a clamp and joined to the other arm of the Y tube, any excess of gas in the rectum may be allowed to escape.

Dr. Leggett has attempted to produce anesthesia with this method in dogs without success, unless anesthesia is first produced by inhalation. Leggett believes that the ether introduced through the rectum does not pass above the ileo-cecal valve, unless this structure has been relaxed by inhalation narcosis. He has given large doses of morphia in hopes of making inhalation narcosis unnecessary, but the results have not been satisfactory. After the dog is once under the influence of ether, rectal ether may continue the narcosis for any length of time. None of Dr. Leggett's dogs have died nor have they had any rectal disturbances.

The cases cited in which the method has been of special service speak for themselves.

At an exhibition of the method before the Clinical Surgical Society at the Boston City Hospital in 1905, the impression received was entirely bad, it being impossible to get the patient under. It was subsequently learned that the ether bottle contained a little ether and a large amount of salt solution. This practical joke, if it may be so called, justly influenced those present against the method. Some of these gentlemen have since seen the method demonstrated under more favorable circumstances.

[8] Jour. Am. Med. Asso., July 28, 1906.
[9] N. Y. Med. Rec., Dec. 1, 1906.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS FOR THE GENERAL PRACTITIONER.*

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In the strict sense of the term an early diagnosis of pulmonary tuberculosis cannot be made, for the evidence does not permit of it. It is a fact of not uncommon observation that in autopsies of persons dying of some other disease, an old tuberculous cicatrix is found in the lungs, which had manifested no symptoms or produced no impairment of the ordinary health during life.

What we understand, however, by an early diagnosis is the earliest possible moment that we can detect the disease, either by physical signs or

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constitutional symptoms, or both, or by bacteriological proof; and in order to do this, the tubercular process must have reached a certain minimum amount of involvement of tissue and produced a certain amount of change sufficient to interfere with normal resonance and respiration, or to produce an impairment of the general system indicated by the presence of various constitutional symptoms.

We have in the past been inclined to say that if our physical and bacteriological examination was negative, pulmonary tuberculosis did not exist, or, at least, that the evidence of it was not at hand, even if the general symptoms plainly indicate its existence, or made it highly probable that the disease was present.

We may regard an early diagnosis of the disease from two points of view. First, that dependent upon physical findings, which is rarely if ever a genuine early diagnosis; and, second, that dependent upon general symptoms and history, or determined by the tuberculin reaction, which more nearly approximates a genuine early diagnosis. Indeed, by the term "early diagnosis," we now mean that stage of the disease when the evidence is almost entirely from constitutional rather than local symptoms, when the examination of the sputum, if any exists, is so often negative, and when the physical signs are lacking or uncertain.

It is this latter early diagnosis which, I believe, the general practitioner should seek to make, and in which, in my opinion, he will be the more successful; for even if a few physical signs exist in the lungs, they are difficult of detection and not always easy of interpretation even to the most accustomed ear.

First of all, we will consider the early diagnosis of pulmonary tuberculosis from the standpoint of the early symptoms as the most important consideration of the subject, and see how nearly we can arrive at an approximate or probable diagnosis from such symptoms; and, secondly, some of the earliest physical signs discoverable will be considered.

Norris says[1] that "there are four easily ascertained and highly suggestive symptoms, the existence of which should always arouse our suspicion unless their presence can be definitely explained upon other grounds. They are (1) rapid pulse; (2) evening rise of temperature; (3) loss of weight; (4) cough." "The protracted existence of any two of these symptoms," he continues, "requires that good cause be shown why diagnosis of tuberculosis should not be made."

Cough, no matter from what alleged cause, if it is continued for six, eight or ten weeks, should always excite suspicion and demand careful investigation. Of course, we may have a lingering bronchial cough, particularly that resulting from an attack of influenza, but the burden of proof rests upon us that such a cough represents nothing more than the bronchitis.

It is an all too common experience that a patient comes to us with more or less advanced tuberculosis who has been told that the cough which has continued over many months was the result of bronchitis, and hence he was deluded by the false hope that it would disappear in time, and was not of serious import. Much less harm would result, in my opinion, if every cough of over eight or ten weeks' standing should be regarded as indicating tuberculosis and the patient treated for the disease if no other discoverable cause for the existence of the cough should be found.

A probable diagnosis of tuberculosis should be made, says Wilson, in a case in which a long persistent and otherwise unexplained cough is accompanied by either a sub-normal temperature or one that rises slightly during the afternoon.

We are all familiar with the short, hacking, hardly noticeable cough of tuberculosis. It is sometimes hardly more than a clearing of the throat, and even its existence may not be recognized by the patient unless a thorough investigation is made. Such cough is of very little consequence in the patient's estimation: it causes him little or no annoyance, and, in fact, may only occur in the morning. In proportion, however, as it is slight, but continuous over a long period of time, particularly if it occurs only in the morning and is accompanied with some expectoration, however slight it may be, it is to be regarded as evidence of probable tuberculosis, unless other evidence disproves it.

A rapid pulse, particularly when apparently of diminished tension, is another highly suggestive symptom of pulmonary tuberculosis, and should lead to the careful scrutiny of other symptoms. Brehmer, who first established the present universally accepted open-air method of treatment, and who was a keen observer, maintained that in tuberculous individuals the heart was disproportionately small to the size of the lungs, and others have held the same view. However one may regard this theory, it is a fact of common observation that a rapid and more or less weakened heart is not an uncommon symptom in early tuberculosis, and therefore should always lead to further inquiry in a suspected case. Dunham[2] considers the best symptomatic guide to be the condition of the pulse taken in the latter part of the day, and if, while resting, the pulse is found to be constantly 90° F., the probability of tuberculosis should be strongly suspected; and, further, if at the same time there is a slight rise of temperature, even of a few tenths of a degree, frequently occurring, these two symptoms, viz., rapid pulse and slight increase of temperature, should be sufficient to establish the diagnosis of tuberculosis, other causes being excluded.

An increase in temperature, even if slight, if it is persistent, is, as we know, a leading symptom unless otherwise accounted for, and when accompanied by other corroborative signs would lead us to make a highly probable diagnosis of pulmonary tuberculosis. One should, therefore, in any suspected case, take the temperature several times a day for a week, and this can be done

[1] "The Diagnosis of Incipient Pulmonary Tuberculosis," reprint from American Medicine, June, 1906.

[2] Personal communication.

either by the patient himself after a little instruction, or the patient can present himself at the doctor's office daily for the purpose.

Loss of weight, if more transitory, indicates that some chronic affection is disturbing metabolism and assimilation, and if accounted for by no other satisfactory cause is highly suggestive of tuberculosis, since this disease is so prevalent that it is more likely to produce this condition than any other.

In like manner is loss of strength, even if slight, an important danger signal pointing towards the direction of tuberculosis.

Again, a slight amount of breathlessness on exertion, like mounting stairs or a hill, is highly suggestive. When one becomes easily fatigued from insufficient cause, and when this is associated with even slight dyspnea on exertion, in the absence of cardiac lesions, it is strong evidence of probable tuberculosis.

Digestive disturbance and more or less anorexia are indications of an infection of some kind, and if other indications point towards tuberculosis, it is probable that the bacillary infection is causing this disturbance of metabolism and assimilation. Pryor, however, says that loss of appetite and indigestion are not noticeable to any great extent as a rule during the early manifestations of the disease. The entire attention of the patient may be directed to the digestive disturbances, and the tell-tale symptoms of loss of weight and strength, and the cough, may all be referred to a disturbed condition of the stomach, a natural mistake on the part of the patient, and an occasional and unfortunate one on the part of the physician.

Although, as we now know, pulmonary tuberculosis is not inherited, a lessened resistance to it, or at least a susceptibility, to it, is apparently a matter of inheritance, and therefore the family history is of importance; and when such history is positive it should render us very suspicious of all symptoms, however slight.

Hemoptysis is almost pathognomonic of pulmonary tuberculosis unless we can clearly prove that the hemorrhage is the result of mitral stenosis or from some other definite source; we can make it a rule, which has few exceptions, to regard such cases of hemoptysis as tuberculous.

"The three most important symptoms," says Pryor, "which may reliably guide us, are hemoptysis, fever and loss of weight when they cannot be otherwise explained." Indeed, it is fortunate if the first symptom that comes to our attention is hemoptysis, for then we have the diagnosis at once established and treatment can at once be instituted.

From considerable experience and observation, I am of the conviction that the majority of cases of pleurisy are of tuberculous origin, and hence in any case of pleurisy, particularly when accompanied with serous effusion, one must bear in mind a possible and probable pre-existing tubercular infection, and observe with great care the subsequent course of the pleurisy.

There are other symptoms of more or less importance which all have corroborative value in connection with those already mentioned. Such are dilatation of the subcutaneous vessels indicated by a prominent veinous network, the result probably of a vaso-motor disturbance due to the tubercular infection; a tendency to ready perspiration, even in cold weather; chilliness; paleness; more or less anemia; looseness of the bowels in some cases, or, more often, constipation; hoarseness and others.

One should also carefully inquire into the habits, the occupation, possible exposure to the disease, and the previous illnesses of the patient, and (which is important) give the patient an opportunity to tell his own story in his own way.

In many cases, the majority, Dunham thinks, the patient will declare that he has always been well, with the exception of some of the specific infectious diseases of childhood. And if the disease is well established or moderately advanced the patient will give a history of several attacks of "influenza," or having suffered from what was supposed to be "malaria." Sometimes, also, he will refer to typhoid fever as having occurred sometime previously. Not improbably, these were manifestations of active tubercular infection mistaken for these diseases.

Secondly, what are the earliest physical signs? I would repeat that, in the early diagnosis which we have been discussing, as a rule, there is no marked evidence of disease in the lungs. As Janeway says, there may be an absence of physical signs and yet a presence of the disease.

We may consider physical examination under three heads: inspection, percussion and auscultation. Of these three, *auscultation* renders the most valuable service and perhaps is generally the only means of determining any abnormal physical condition in the lungs, in early cases. In inspection (and the patient should always be stripped to the waist for a proper examination, whether man or woman), one observes the condition of the skin, subcutaneous veins, shape of the chest, evidence of loss of flesh, glandular enlargement, and readiness to perspire. In watching the patient's breathing, it is not infrequently noted that there is a retardation of the respiratory movement over the affected lung.

As a rule, in the very early stage when any physical signs are present, one learns nothing or but little from percussion, for at such a time percussion is practically normal, or there is so little deviation from the normal that it requires the most acute and highly trained ear to detect it.

It is upon auscultation that we must depend practically for the detection of changes in the lung tissue due to tuberculosis, and we may consider it almost an axiom that *anything* abnormal heard in the apices of the lungs is to be regarded as the strongest kind of evidence, almost amounting to proof, that tuberculosis exists. Such changes are revealed through auscultation, first, by the respiration; second, by the presence of adventitious sounds. The most important respiratory change is what the Germans call "rough

breathing," and weak or slightly diminished breathing.

Next in importance, according to the National Association, is the presence of râles, which I would consider of the first importance, as they are the most constant and the most easily determined sign. Slight dullness and slight changes of respiration are uncertain of detection, and even the most skilled diagnosticians are often in doubt as to their real existence. Hence the difficulty of drawing any positive conclusions from these sounds. But localized râles are certain and, when found, prove almost conclusively the existence of pulmonary tuberculosis. It does not matter so much what name we give these râles or their exact character. In general, they are fine crackling râles, but we can call them clicks, crepitations, fine, moist râles, crepitant or subcrepitant râles, or whatever we please, if we only recognize them. They are generally found above the clavicle, or below it in the middle or outer third, or behind in the suprascapular fossa. They are heard most frequently after a single slight or genuine cough followed by a deep inspiration.

Turban mentions the incident of a patient who had been through many doctors' hands, and who decided the diagnostic ability of his adviser by whether or not he asked him to cough during examination.

I do not mean to say that changes in the respiratory murmur which I have mentioned, namely, the harsh breathing, weak or diminished, breathing, etc., are not of important diagnostic value when they can be surely made out, but one must confess that to most examiners their existence is often in doubt, and, consequently, they are uncertain symptoms.

"The great and predominant value of the localized râles," as Whitney[3] says, "in the diagnosis of incipient tuberculosis consists, first, in their almost constant presence at a time when other local signs are absent, or at most indefinite; second, in their practically unmistakable character, themselves differing widely from other signs which represent merely deviations from the normal; third, in the fact that when occurring at the apex they are almost pathognomonic, other conditions which might produce them being exceedingly rare."

While, therefore, other local signs are of great value, especially for the few experts who by long experience have learned their limitations and the frequent difficulty of interpretation, the presence of localized râles must ever remain the essential guide to early diagnosis from physical signs for the rank and file of the profession.

"The earliest physical sign," says Hector MacKenzie,[4] "which is really characteristic, is the presence of râles or crepitations."

Dr. Henry I. Bowditch, the elder Bowditch in "The Young Stethoscopist" 1848, many years ago pointed out a sign which I have not infrequently verified and which I believe of much value in early diagnosis. "Not infrequently," he says, "a sound like a simple whistle or sonorous râle is heard above the clavicle, while in the remainder of the chest there is a healthy vesicular murmur. This strongly indicates the existtence of tubercular disease of the patient, if the patient is suffering from a chronic affection, especially if it be connected with any other morbid physical or rational sign."

As the disease advances, other plain and evident physical signs appear, the consideration of which does not come within the scope of this paper, and which are all familiar to you.

One other valuable aid to the early diagnosis I cannot, however, pass by, namely, the use of tuberculin. I have used it in a very considerable number of cases, and have never known it to produce any injurious results. I believe, with ordinary care, it is harmless, and will frequently enable us to establish beyond a doubt the existence of the disease. The technique of the procedure is simple and plain and within the skill of any practitioner. The dose, I believe, should be small, at least to begin with, from $\frac{1}{10}$ to $\frac{1}{2}$ mgm.; and if reaction does not occur, then 2 to 5 and even 10 mgm. should be used at intervals. I used Koch's old tuberculin, which can be very readily diluted so that the fractions of the milligram can be easily measured.

I will not take the time to consider the various signs and symptoms which constitute a reaction, for such are readily accessible in the abundant literature upon tuberculosis. I believe, however, that any practitioner who makes a trial of this test will be convinced of its value and harmlessness.

In the preceding I have merely discussed some of the points which, I believe, are of the most importance in making an early diagnosis. Many other secondary signs and symptoms have of necessity been omitted, but if one will confine himself to those which have been mentioned and become thoroughly familiar in their detection, I am sure that he will rarely fail to make either a definite or probable early diagnosis; and, as we know, if a direct diagnosis is made in the early stages, we can almost certainly bring about complete arrest of the tubercular process. And, as Knight says, we should not wait in all cases for a positive diagnosis before putting our patient with suspicious symptoms under the best possible conditions for recovery.

In all cases it is, of course, understood that the sputum, whenever it exists, should be examined for the tubercle bacillus; but in the majority of early cases, this evidence will not be obtained, and it cannot be too often repeated that to wait for the presence of the tubercle bacillus will in many cases mean, to wait until the disease is moderately or far advanced.

The following cases will illustrate my thesis, and were kindly selected for me by my colleague at the Massachusetts State Sanatorium, Dr. Dunham:

I. *5178 B.* Male, thirty-two, single, bricklayer. Slight cough and expectoration over two months. Lost twenty pounds in two years; rather "bilious"

[3] "The Predominant Value of Localized Râles as a Sign of Incipient Phthisis," reprint, May 18, 1905.
[4] Gibson's "Text-Book of Medicine."

lately. Pulse 100 in the evenings and temperature 99–2°–4° at the same time. Tubercle bacilli not found in the sputum on three examinations (but found later). Small area of faint bronchial respiration in the left lung, just above and outside of the border of the heart. A *few scattered* râles in the upper part of the left lung.

II. *5036 B.* Male, nineteen, cigarmaker. Coughed three or four times a day for a month. Little or no expectoration. No bacilli. Temperature and pulse fairly good, but since found to be rather high. Loss of six pounds in weight during the month. Physical signs negative. Patient raised half a cup of blood three weeks ago, the only factor for making positive diagnosis.

III. *5084 B.* Male, married, forty years old, street car conductor. Had a little cough during the winter at times; raised very little at times. No loss in weight; general condition excellent. Slight shortness of breath on much exertion. Physical signs: the very faintest clicks heard above both clavicles. Temperature and pulse normal. Patient still at work. Tubercle bacilli found in trace of expectoration raised on that morning (morning of examination) and were found twice later. The only thing which brought the patient for an examination was a little streak of blood which he saw in what he always regarded as throat catarrh.

IV. *5124 B.* Widower, age forty-five, mason. Slight cough for six months. Little sputum. Lost ten pounds in weight; pulse and temperature normal, Very little to find in his chest on physical examination. Percussion note on both tops seems to be poor, and one or two slight clicks are heard in the left back. However, many tubercle bacilli were found repeatedly upon microscopic examination.

V. *4774 B.* Male, single, age twenty-five, priest. Very slight cough and expectoration. Considerable dyspnea on much exercise. Lost twelve pounds in three months. Pulse and temperature normal. Examination of the sputum by Board of Health negative. He had bronchitis three years ago and pleurisy seven or eight years ago. This might be looked upon as a case of bronchitis if it were not for the fact that there were dullness, râles and br. v. resp. in the right apex, front and back, and many tubercle bacilli constantly found in the expectoration (after the first negative report mentioned).

VI. *5070 B.* Male, single, age twenty-three, mechanic. Practically no cough or sputum. Physical signs very marked, however, in the right top, and pulse decidedly rapid, although there had been no loss of weight. Tubercle bacilli abundant in the trace of expectoration he was coaxed to give.

VII. *5214 B.* Male, single, student; pneumonia eight years ago. Little cough for three or four weeks. Raised a trifle only during the past two days. Eight pounds below normal weight. Difficult to find anything in the lungs except a *few* clicks in the left supraclavicular region; pulse, however, is 100 and a few tubercle bacilli have been found in his sputum.

VIII. *5012 B.* Male, single, nineteen, clerk. Slight cough for seven months. Loss of twenty pounds in the last three months. Almost nothing abnormal heard in the lungs, chest broad and well shaped, respiration good. History of spitting teaspoonful or two of blood on one occasion. Twelve examinations of the sputum negative after one positive. Tuberculin reaction positive.

MEDICAL FEES IN GERMANY. — The High Court of Germany has decided that it is illegal for the physicians of any locality to band together and establish a definite code of fees for professional services. — *Medical Record.*

REPORT ON A PECULIAR DISEASE OF TROPICAL AFRICA CALLED "ONYALAI." *

BY F. CREIGHTON WELLMAN, M.D., BENGUELLA, WEST AFRICA.

DURING the three or four years that have elapsed since the writer first reported the existence of the disease called by the Umbundu-speaking natives of Angola "Onyalai," several workers have written concerning the same or a similar affection, and a *résumé* of these observations may be helpful. Since my first note I have studied several additional cases with the object of determining the cause of the various symptoms, and the data relating to these are here presented for the first time.

HISTORICAL NOTE.

1. The first mention of the disease was, I believe, my initial note published early in 1904. In this I stated that hemorrhagic bullæ are a feature of the trouble and added the following: [1] "Onyalai" is "a common and very treacherous disease, greatly feared by the natives, considered by them very fatal. I was once disposed to treat the native view very lightly, but after seeing cases die from it in a few hours from the beginning of an attack, I revised my notion. The bullæ may be small and affect only the surface of the body, or occur only on the tongue, soft palate or buccal mucous membrane. When large and involving the esophagus and pharynx they may cause trouble, but when they occur in the brain, its membranes, or even in the important abdominal viscera, death often results. The size of the bullæ varies markedly, ranging from that of a split pea to that of a half crown piece." Later [2] I repeated this note and added that "the disease is not pemphigus, *Dermatitis herpetiformis*, nor the affection known as *Epidermolysis bullosa*. The bullæ appear suddenly after an initial period of malaise. . . . The vesiculation is rather deep and, when occurring in the skin, always involves the corium. The bullous formations contain trabeculæ, the interstices of which are filled with partially coagulated blood, to which their dark colour is due. The disease generally disappears (if death does not occur) as suddenly as it came."

2. Massey [3] published, subsequent to my preliminary note, the record of three cases of "Onyalai" seen by him in Angola. These cases all had symptoms similar to those detailed by me and all recovered. Massey states (what coincides with my experience) that the blacks are very much afraid of the disease, regarding it as most fatal. He treated his cases with bicarbonate of soda and cod liver oil.

3. Feldman [4] has mentioned a disease among the natives of Bukoba in East Africa and called by them "Edjuo" which Mense [5] is inclined to connect with "Onyalai." Feldman noticed stomatitis and swelling of the parotid glands in connection with his cases.

4. Mense [6] observed during his stay on the Kongo a disease, called by the Unyamwezi people "Kafindo" which spread across equatorial Africa

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and which was marked by depression, malaise, headache, reddened conjunctivæ, numbness, swelling of the tongue, loss of appetite, and occasional bloody diarrhea, dyspnea, cardiac disturbances, etc., all of which symptoms I have seen in my cases of "Onyalai." Mense states, however, that the peculiar bullæ described by me were not noticed in his cases. He did not personally observe any cases that terminated fatally, but such were reported from East Africa. He differentiates "Kafindo" from dengue and other diseases and discusses its possible connection with poisoning with Euphorbiaceæ and other native plants. Mense in conclusion mentions the native treatment, which consists of scratching the tongue until bleeding occurs, and that of the missionaries (phosphorus, essence of bee venom) and recommends for the stomatitis astringent mouth washes.

It is not absolutely certain that these several observations all relate to the same disease, but it is very probable that they deal with identical or closely related affections. I know of no other literature on the subject.*

ETIOLOGY.

Obscure. Following are notes on some of the investigations I have made regarding this point. The results of my inquiry are largely negative and may be stated as follows:

1. "Onyalai" is not a manifestation of malaria. While the hemorrhagic and other symptoms of the affection under discussion are not unknown in malarial processes, yet I consider that I have excluded this infection as an etiologic factor. I base this statement on the following data: None of my first 8 cases had any enlargement of the spleen and but three of them showed rise of temperature. These 3 were examined for malarial parasites but none was found. None of my 5 recent cases showed enlargement of the spleen. Only one of them showed malarial parasites in the blood. In another case I found some pigmented leukocytes. This case, however, had just come from a very malarious district and I had administered to him large doses of quinine for some days. None of the other cases had had quinine. Twelve of the 13 cases were suddenly taken ill while in robust health. Also 12 out of my 13 cases were males. Two of Massey's cases were males. The sex of the third is not given. Nearly half of the cases had experienced the same trouble before. In two instances two members of a family were affected and in four instances more than one case came from the same house. All these facts suggest to my mind something very different from malarial infection which is almost universal among Africans while "Onyalai" is comparatively rare. While preparing my recent report to the *Società per gli Studi della Malaria*,[7] I examined microscopically the blood of over 500 natives and took the spleen index of as many more, and I find on comparison that my cases of "Onyalai" were rather freer from the signs of malaria than the average native of my district.

2. "Onyalai" is not accidental or purposed poisoning. I have had occasion to study the various substances included in the poison test [8] and those formerly used to poison arrows [9] as well as the medicinal plants employed by the blacks of this district [10] and the symptoms set up by poisoning with any of these are radically different from the clinical picture presented by a case of "Onyalai." A case of snake bite from the puff adder (*Clotho arietans*, Gray) which I reported some time ago [11] simulated some cases of "Onyalai" very closely, but my patients had none of them been bitten by snakes.

3. Trypanosomes and other organisms were searched for with no result. On two occasions I cauterized the surface of large bullæ and cut down on the inclosing clot, removing a piece of the same and dropping it into sterile broth. Such cultures remained sterile.

4. "Onyalai" is easily and sharply distinguished from Schönlein's disease by the absence of the multiple arthritis, eruption, etc., and from Henoch's purpura by its frequency in adults and acute course. It cannot be identified with *Purpura hemorrhagica* as it occurs oftenest in robust and adult males. It must be emphasized, too, that the superficial hemorrhagic bullæ are by no means to be considered the only nor indeed the chief factor in the disease, for, as will be shown later, I have seen two fatal cases of what I believe to be this ailment in whom no bullæ were visible, either on the skin or mucous membranes. In other cases they were so small and few in number as to be easily overlooked. There do not occur to me any other diseases for which "Onyalai" is likely to be mistaken.

To sum up: I am inclined to consider "Onyalai" a specific entity, in other words an acute infectious disease the cause of which is as yet undetermined.

CLINICAL FEATURES.

Most of my cases were attacked suddenly. Lassitude and a sort of dazed appearance was generally marked. In some cases the parotid glands were tender to the touch. The eyes appeared heavy and sometimes reddened. In most instances the tongue was swollen and painful. A slight temperature was noted in about a third of the cases. I have had patients complain of numbness and of pain in various parts of the body. One man who had bloody diarrhea suffered much from colicky pains. The appetite is usually poor. The bullæ may appear in the mouth, pharynx, esophagus, stomach and bowels. Vomiting of blood is not rare. The skin also usually shows lesions. The genito-urinary system was affected in 3 of my cases. Hematuria was a prominent symptom in all of these. When the process occurs in the cranial cavity various symptoms of profound central disturbance are

* Maxwell (*Journal of Tropical Medicine*, July 1, 1901, p. 211) has reported hemorrhagic bullæ of the mouth and pharynx seen by him in Changpo, South China. These, however, probably have no connection with "Onyalai" since, according to Maxwell, the bullæ are confined to the oral cavity and are accompanied by no systemic symptoms. The Chinese attribute the bullæ to the accidental introduction into the mouth of a certain kind of spider web.

set up. Three cases of this kind have come to my attention. One of these was a young woman in rude health. She was laughing and playing on the evening of her attack. Suddenly she complained of being tired, and in an hour or so bullæ appeared in her mouth. She steadily grew more depressed and died about eight o'clock the next morning with all the symptoms of cerebral hemorrhage, *i. e.*, loss of consciousness, inactive, dilated pupils, slow, noisy, stertorous breathing, etc. The pulse was very slow and increased in tension. Another fatal case in the same house, a strong young man being the victim, presented almost exactly the same symptoms. A third fatal case showed no vesicles, either in the mouth or in the skin. The feces and urine likewise contained no blood. Another case which I have also referred to this disease also showed no vesicles, but died from the effect of what I believe to be the same process in the liver, spleen and pancreas. (These last two cases were shown microscopically not to be pernicious malaria.) The superficial bullæ when present are characteristic. They range from the size of a split pea to several inches in diameter. The larger ones are irregular in outline and are often umbilicated. They are deep and involve the corium or submucous structure. There seems to take place an extensive histolysis, only the fibrous elements persisting. These appear as trabeculæ, the interstices of which are filled with partially coagulated and otherwise altered blood which shows dark under the skin or mucous membrane. The red corpuscles, however, are not all disintegrated, and may be seen under the microscope in the oozing from the blebs and also in the feces, urine, saliva, etc., according to the situation of the lesions. In one or two cases the bullæ were very small and not numerous, and had the patients not directed attention to them would probably have been overlooked.

PROGNOSIS AND TREATMENT.

My series of cases is yet too small to admit of general statements. As has been said, the natives consider "Onyalai" to be a very fatal disease and tell of instance after instance that have terminated in death. Of the 13 well authenticated cases studied by me 2 died. To these should probably be added the 2 cases previously mentioned which showed all the symptoms of the disease excepting the characteristic bullæ. The malignancy of the disease varies greatly, judging from native reports, some seasons and districts exhibiting many more fatal cases than others. It should be said that the trouble has a tendency to recur. I have seen one man who has suffered three attacks and another who has had two. The relapses seem to occur a few months apart.

As to treatment I am not prepared to be dogmatic. The natives employ various plants, prominent among which is *Geigera wellmani Hutch*, and a species of Albizzia (*A. anthelmintica* A. Brong.). I have personally tried quinine, various alkaline salts, oil of turpentine, acetate of lead, tannic acid, ergot and suprarenal extract with no perceptible results. I am inclined to think that arsenic in full doses has benefited some cases.

In conclusion I should be pleased to hear from any colleague who has met with the disease.

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[8] 1904. *Id.:* Medicine, April, 1906, p. 254. *Vide* also editorial in Journal of Tropical Medicine, Dec. 1, 1906, p. 357.
[9] 1907. *Id.:* Deut. Entomologische Zeitschr., Jan., p. 17.
[10] 1906. *Id.:* Am. Med., Jan. 20, p. 94.
[11] 1906. *Id.:* New York Med. Jour., June 23.

Reports of Societies.

TRANSACTIONS OF THE TWENTY-NINTH ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

HELD AT WASHINGTON, D. C., MAY 7, 8 AND 9, 1907, IN CONNECTION WITH THE SEVENTH TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

FIRST DAY, TUESDAY, MAY 7.
SESSION AT 10 A.M.

PRESIDENT'S address by DR. A. W. DE ROALDES, New Orleans, La.

The President thanked the Association for the honor it had conferred upon him and alluded to his own work in the establishment of the Hospital for Eye, Ear, Nose and Throat Diseases in his own city. He felt that it was the Association's duty to push the work of securing for the specialty a greater recognition than it yet enjoyed in the medical schools, and that a further need of the times was the establishment of more special hospitals for this class of diseases. This would not at all interfere with special departments in general institutions. He also announced his intention to establish a prize fund for the Association. This suggestion had been made many years ago by the Association's first president, the late Dr. Louis Elsberg. He referred to the deaths of Senor Manuel Garcia, Honorary Fellow, and of Dr. William Carr Glasgow, Active Fellow, both of whom died since the last meeting. He also referred to the celebration of Professor von Schroetter's seventieth birthday in Vienna, to the similar celebration in honor of Prof. Bernhard Fraenkel, in Berlin, the pleasure felt in welcoming Prof. Gustav Killian, of Freiburg, to the present Congress and the proposed Tuerck-Czermak Congress to be held next spring in Vienna to celebrate the semi-centennial of the establishment of systematic teaching in laryngology.

TUBERCULOSIS OF THE ACCESSORY SINUSES OF THE NOSE.

The scientific business of the congress was opened with a paper with the above title, read by DR. J. W. GLEITSMANN, of New York City. The paper, which closed with a bibliography of recorded cases, was in the main an analysis of these cases. The majority of instances of sinus tuberculosis are referable to extension from some adjoining focus. In 20 antral cases, tuberculosis of the bones of the nose or the upper maxilla was found 12 times. The majority had pulmonary disease, and only a few had the local disturbances of antral disease without constitutional symptoms, but

at operation tubercle bacilli were found in the antral contents. In 8 the bacilli were found in the external discharge. Tubercle of other sinuses must be rare, as the author has found records of only 4 cases of frontal disease and one of combined ethmoidal and sphenoidal disease. Pathological changes are very much the same as in nasal tubercle. Empyema, exuberant granulations, caries, cheesy deposits, — all are found, while examination of the sinus lining has shown exfoliation of epithelium, extensive small-celled infiltration, penetrating the superficial as well as the deep layers of the mucosa, while the middle strata have revealed the fibrous structure of the connective tissue containing serous liquid and some leucocytes. Efferent glandular ducts and their lumina have been enlarged, giving rise to cystic spaces, and giant-cells have been found in the infiltrated tissue. Of the entire number only 3 cases showed confinement of the tuberculous process to the antrum, viz., the cases of Coakley, Gaudier and Keckwick. Dr. Gleitsmann gave summarized clinical histories of some of the more important cases. Prognosis must be regarded as unfavorable. Treatment is eminently surgical and does not differ from that generally adopted in severe cases of sinus disease. It naturally has to be more radical as not alone the soft parts but all diseased bone has to be removed. General health must be supported, drain on the system combated and the patient's mental condition encouraged. We have no positive knowledge up to the present time that tuberculin or any of its derivatives would make any impression on these sinus cases. Not much could naturally be expected from such remedies under the given conditions or from the opsonin plan, for all these are principally confined to the elimination of bacilli (found in only a minority of sinus cases) and they do not influence directly the conditions due to the extension of the pathological process. Dr. Gleitsmann finds no contra-indication, however, to their use and would be inclined to try them in view of the favorable results reached in uncomplicated nasal tuberculosis.

DR. C. G. COAKLEY, New York, gave some additional facts as to his own patient whose case was referred to by Dr. Gleitsmann. This patient had been under observation for over two and a half years, and when last seen had no evidence of the disease in any other part of the body. Diagnosis was positive in this case as giant-cells containing tubercle bacilli had been found in the tissue removed from the antrum.

PROF. GUSTAV KILIAN, of Freiburg, a guest of the Association, stated that he had had a case of multiple tuberculosis of the bones with caries of the left frontal sinus. Operation was followed by recurrence of the sinus condition. There was tuberculosis of the maxillary bone and of part of the antral walls but no pus. Tubercles were found in the mucosa of the frontal sinus.

DR. HARRIS P. MOSHER, Boston, referred to a low grade of tuberculosis, a scleritis which has defied treatment and diagnosis as to cause. Finally, the use of tuberculin determined its nature. Dr. Mosher had recently been giving tuberculin in certain sinus cases but thus far had obtained no reaction. In the ordinary forms of tuberculosis in sinuses it was difficult to find bacilli. He would not consider tuberculin as of much value in these cases as compared with the usual methods of surgical intervention. The discussion was closed by Dr. Gleitsmann who referred to the work of Bartles who had endeavored to formulate the condition known as the tubercular state, declaring that before this period arrived there was a pre-tubercular epoch manifesting itself mainly in lymphoid infiltration, a hydremia of the parts involving the lymphoid tissue similar to the hydremia observed in septic cases before real septic symptoms manifested themselves.

MASSAGE OF THE PHARYNX.

A short paper on this topic was presented by DR. SAMUEL W. LANGMAID, of Boston, who exhibited an instrument which had been devised for the purpose named, by an eminent tragedian, the late Edwin Forrest. This instrument was a smooth wooden handle with curved ends which Forrest was accustomed to sweep around in his throat in order to "ream out the old trumpet," as he expressed it. It had been impossible for various reasons to discuss with the actor the latter's views as to the value of the manipulations referred to. Dr. Langmaid had long been accustomed to recommend to his patients massage of the throat by some such implement as the broad, rounded extremity of a tooth-brush handle. It greatly reduced the irritability of the pharynx, removed enlarged follicles on the posterior wall and in general seemed to reduce hyperemia. Since writing his paper he had found that a century ago a certain British admiral, who wrote more as an osteopathist than as a masseur, recommended instrumental massage of the mouth and throat, not only as a prophylactic measure but as curative also for sore throat.

DR. J. SOLIS-COHEN, of Philadelphia, stated that he had often used the so-called extension-finger of the dentists in pharyngeal manipulation so as to accustom patients to the handling of the epiglottis.

DR. G. HUDSON-MAKUEN, Philadelphia, believed that in these cases much could be done in showing the patient how to keep quiet during examinations by having him manipulate the pharynx with the handle of a tooth-brush or similar instrument. The patient's attitude is too often one of self-protection rather than of co-operation, and he should be taught to give the physician intelligent assistance. Dr. Makuen could not agree with Dr. Langmaid's statement that singers and speakers have anemic pharynges.

DR. CLARENCE C. RICE, New York, was inclined to agree on this point with Dr. Langmaid. In his experience noted singers and actors did not, as a rule, have much chronic pathological change in their throats. His own feeling was that the strong use of the voice and vibratory massage of the pharynx tended to atrophy and anemia rather than to congestion. If he found congestion in a singer's pharynx without any special nasal or post-nasal catarrh, he would ascribe it to tobacco or alcohol rather than voice use. In general, intelligent massage was a useful therapeutic measure

Discussion was closed by DR. LANGMAID who wished to emphasize the value of instrumental massage of the throat. Vessels were thereby reduced to their proper size by the flowing away of the excessive blood, and there ensued a tonic contraction of the tissues.

BILATERAL ABDUCTOR PARALYSIS OF THE LARYNX.

A case of this nature was reported by DR. CHARLES H. KNIGHT, of New York City, who notes that the lesion referred to is more common than authorities have led us to believe. It is often difficult to distinguish between abductor paralysis, adductor spasm and ankylosis of the crico-arytenoid articulation, and prolonged observation is often required in determining the actual condition in a given case. The author passed in review the differential features diagnostic in the conditions named and then reported the case of a middle-aged man of nervous temperament who in childhood had had chorea and had been subjected to severe nervous strain. Had been alcoholic for one year, some years before coming under notice. Six years ago had an attack of ptomaine poisoning. For the year following suffered increasingly from rapid heart action, dyspnea

and vertigo. Later developed sciatica presumed to be the forerunner of tabes. Six years ago contracted syphilis and had the usual secondary symptoms but received thorough treatment. One year ago he was suddenly awakened one night struggling for breath. Later when running for a train he had his first attack of laryngeal spasm. During the last six months he has had some 12 or 14 repetitions of this spasm, all but one or two coming on during sleep. Sometimes the attacks have followed excitement or exertion. After exercise there is always inspiratory stridor. The laryngeal image was typical of bilateral paralysis of the abductors, with a moderate grade of catarrhal inflammation. A redundant uvula was excised, inhalations of metholized oil given, with strychnine and iodide of potash. Electricity seemed to aggravate the patient's symptoms. Under the foregoing régime there has been some improvement. The author referred to the following proposed measures in such cases: (1) intubation, (2) ablation of the soft parts lining the voice box, (3) division or resection of the inferior laryngeal nerve and (4) tracheotomy. His personal experience had been limited to the first and last. In this particular case one observer who had previously seen the patient urged immediate tracheotomy, but this was refused by the patient, who preferred death to wearing a tube. Dr. Knight thought that up to the present time at least the result seemed to have justified this decision. He considered that in such cases the ideal procedure, on theoretical grounds at least, was resection of one recurrent nerve whereby the corresponding vocal band would be placed in the cadaveric position and the voice would finally be regained through compensating action of the adductors of the opposite side. He had been unable, however, to find any successful record of such a case. Mere division of the nerve is useless, as it is possible that in some of these cases a portion of the innervation on the adductors is derived from the nerve of the opposite side and, in addition there may be more or less ankylosis of the crico-arytenoid joint. Tracheotomy will doubtless afford us the most satisfaction. It is best done under local anesthesia. The onset of dyspnea is often alarmingly sudden. Prognosis in such cases is less hopeless than is generally believed.

REMOVAL OF PAPILLOMATA OF THE LARYNX BY DIRECT INSTRUMENTATION WITH THE AID OF KILLIAN'S TUBES.

Dr. Cornelius G. Coakley presented a paper reporting 6 cases of this nature and discussing the general mechanical problems involved. He had tried the Kirstein method of examination years ago but had given it up; but observing at Killian's clinic the case with which bronchoscope tubes were passed through the larynx it occurred to him that such a tube with a window on one side could be used for the removal of laryngeal papillomata. He had had opportunity to give the method a trial in six cases. In all a general anesthetic was used. Some time might be saved by cocoainizing the pharynx and larynx before the administration of the anesthetic. The patient should be placed on the back, the shoulders brought to the edge of the table and, supported by an assistant, allowed to hang over. The operator should sit on a low stool the height of which can be so adjusted that the eye was directly opposite the widely opened mouth. The tongue should be grasped with forceps and drawn out, thus raising the epiglottis and facilitating the introduction of the spatula beyond the tip of the epiglottis. The tongue is now allowed to fall back into the mouth and the spatula is easily passed directly into the supraglottic portion of the larynx. A good view of the cords is now readily obtained and any growth thereon can easily be removed by a straight forceps passed through the spatula. The Kirstein headlight has been the illuminating agent. It has been somewhat difficult to remove multiple neoplasms on account of obscuration of the field by blood and mucus in spite of frequent wiping away with cotton. Out of the six cases the result was satisfactory in 4. One proved to be malignant and required a thyrotomy, while in one the bulk of the growth appeared to be caught between the spatula and the anterior portion of the larynx.

Prof. Gustav Killian said that he had two cases under observation in which he had operated in the method described by Dr. Coakley. In such cases it is necessary to cocainize the larynx very thoroughly or it will contract from the contact of the tubes so that nothing can be seen. This method obviates laryngotomy and tracheotomy. If the patient can breathe sufficiently well to allow of general narcosis, the direct method of operating may be employed. In recurring cases arsenic should be given for a long time. Potassium iodide also seemed to have some power in preventing the recurrence of papillomata.

Dr. E. Fletcher Ingals, of Chicago, had had several successful cases by the direct method. In one case during operation the larynx began to close. The child could not breathe so he had to do a quick tracheotomy as he had no intubation tube. In general he was inclined to believe that tracheotomy was best in all cases in young children, though Dr. Coakley's experience had demonstrated the fact that it was not necessary.

Dr. J. Payson Clark, Boston, referred to a paper on this general subject presented by him to the Association some years ago and gave the later history of some of the cases therein referred to. He had used the direct method in removing the growths. He was still a partisan of tracheotomy as it gave the larynx perfect rest during which a papilloma was more likely to atrophy than when the child was using the larynx as a respiratory organ.

Dr. Emil Mayer, New York, spoke of some of the disadvantages of the tube with reference to the heat from the headlight. The attachment of the light to the handle of the spatula was a great improvement. His own experience as to recurrence had been the same as that of the preceding speakers.

The paper was further discussed by Drs. H. L. Swain, Casselberry, Coolidge, Lincoln, Langmaid, Hubbard, Delavan and Ingersoll. Discussion was closed by Dr. Coakley who stated his belief that cases of recurrence in children were cases in which new papillomatous areas occurred. Such would crop up in spite of all we could do. He certainly would not consider any cases as cured unless there was a freedom from return of the growth for several months. He believed, however, that if these cases were seen early it was often possible to avoid the deformity of an external operation, but one should not give an anesthetic without having a tracheotomy tube handy. He preferred to apply 10% cocaine before the general anesthetic was given, waiting sufficiently long for the cocaine to act. He was not sure of the efficacy of pure carbolic applications to the seat of the growths. It was at least harmless but he would not use it unless the patient was wearing a tube. He had used cocaine in connection with chloroform several times without bad results. He knew, however that such a combination was regarded by some as risky. A tracheotomy tube if worn some years would be likely to cause a certain amount of stricture though this might cause no trouble. Parents were naturally averse to having scars on their children's neck, especially with girls. On the other hand tracheotomy was distinctly of service in giving rest to the larynx.

OPHTHALMOLOGICAL MANIFESTATIONS OF LATENT DISEASE OF THE NOSE AND ITS ACCESSORY SINUSES.

DR. FRANCIS R. PACKARD reported a series of cases illustrating the relation between eye and nose conditions as suggested by the title of his paper. The examinations of the eyes had been made by Dr. W. C. Posey, of Philadelphia. Dr. Packard stated his belief that there should be more active correlation between the ophthalmologist and rhinologist in order to insure the recognition of this class of cases. Experience has shown that the ocular symptoms occurring as a result of sinus disease may variously affect the vision and visual field, orbit, lachrymal apparatus, lids, extra-ocular muscles, conjunctiva, cornea, pupil, uveal tract, and may lead to cataract, reflections, asthenopia and headaches and neuralgias. His series of nine cases reported bore out the foregoing statements. The truth of this theory of connection between the two organs was borne out by the results of treatment. Dr. Packard referred to various contributions on the subject by various authors.

DR. J. H. BRYAN, of Washington, D. C., had for some time been accustomed to have his sinus cases examined by an oculist and had seen external rectus paralysis from sphenoid disease, scotoma, narrowing of the visual field, etc.

DR. G. A. LELAND, Boston, stated that there were three cardinal symptoms of the eye condition that pointed directly to an intranasal origin,— astygmatism against the rule, ciliary reflex and narrowing of the color field. He gave the detailed history of one case of the nature described in Dr. Packard's paper.

DR. L.A. COFFIN, New York, said that the connection between eye and nose conditions was not yet sufficiently recognized even in special institutions. Patients operated on for sinus disease were often able to lay aside their glasses.

DR. F. C. COBB, Boston, said that in sinus disease conjunctivitis may arise from direct infection from nose to eye but with regard to astygmatic affections, there was little satisfactory evidence. There was a tremendous neurasthenic element in all these patients, and allowance ought to be made for this before we make positive statements as to the relations between the maladies of the two organs in question.

DR. H. P. MOSHER thought ptosis a rather unusual symptom of latent frontal sinus disease. He had, however, seen it once. He had come to the conclusion that the x-ray would clear up many cases of weakness of vision due to trouble in the sinuses or ethmoidal region. An ethmoidal condition might be revealed which had given no signs in the nose. Discussion was closed by Dr. Packard.

SECOND DAY, WEDNESDAY, MAY 8.

SESSION AT 10 A.M.

SPASM OF THE ESOPHAGUS.

DR. JOHN W. FARLOW, Boston, reported the case of a woman of fifty years who was subject to spasm of the esophagus and whose father and paternal uncle were subject to similar attacks. The patient herself had had a few attacks of discomfort of the throat while eating, and four years ago, while eating a piece of raw apple, became pale, looked distressed, put her hand to her throat and was evidently in great distress. Pain was felt in the lower part of the neck but did not extend to the back or arm. She was able to speak, and pulse and breathing were not affected. Was unable to swallow anything during the seizure. Hot applications to the neck gave comfort but did not relax the spasm. In about twenty minutes she felt relief from pain, raised some frothy mucus which had collected in her throat and the attack was over. Examination showed only a slight chronic pharyngitis and a moderate enlargement of the lingual tonsil. She went then for a year without a further seizure and the third attack did not come on for still another year. Massage of the neck was begun, cold compresses used and local treatment applied to the throat. She has now gone another year without an attack but the author admits that treatment may not have had any effect. He would ask, What is the nature of such attacks and how are they to be differentiated? Angina pectoris would cause great dyspnea, pain in chest radiating down the left arm and there would be changes in the pulse and breathing. These were all wanting in his patient. We consider esophageal spasm as more likely to occur in neurotic patients but this woman is not in the least neurotic. A further matter and the one of practical importance concerned measures of relief. The patient was unwilling to allow the use of any anesthetic which might have caused unconsciousness. A hypodermic of morphine might have relieved her, but in the two attacks in which Dr. Farlow saw her, she seemed hopeful that the spasm would soon relax and was loath to have morphine used. As she could not swallow and her mouth was full of saliva and mucus, he did not think that cocaine would have any effect. Emetine had been suggested in tablet form and the patient could carry the remedy with her, to be used at the onset of any further attack. Perhaps apomorphine in $\frac{1}{6}$ gr. hypodermic dose would be efficacious, but as it would require from five to twenty minutes to act, it might not really shorten the attack. Dr. Farlow asked for therapeutic suggestions from those present.

DR. H. L. SWAIN, New Haven, had had a recent case of the kind referred to by Dr. Farlow. His patient referred the origin of his spasm to a point on the left side of the throat. There would be a sort of cramp with pain and then until the throat relaxed nothing could be swallowed, even water. The sigmoid sinus was cocainized and an instrument passed down to a level just below the cricoid. Then the man was able to swallow. By the esophagoscope a round swelling was discovered on the left side about 25 cm. down from the teeth. A mild silver nitrate solution was applied but the patient did not report again and his later history was unknown. The condition seemed to be a cramp of the esophagus.

DR. W. E. CASSELBERRY, Chicago, wished that Dr. Farlow had tried cocaine. He had had several cases himself similar to the one reported, as to symptoms at least, and in these cocaine had done good service. Even if we are not able to apply the remedy directly to the seat of spasm enough exudes through near to the place of spasm to affect the muscles in the neighborhood.

DR. L. A. COFFIN thought that some of these cases were instances of disordered reflexes. In one case cure had resulted by the removal of adenoids. There might be various peripheral points from which the stimulus would come, it being expended in each case on the esophagus.

DR. E. FLETCHER INGALS, of Chicago, had had under observation for some weeks a case similar to Dr. Farlow's. The passage of bougies of large size gave relief. Cocaine might be used before passage, though his patient preferred its omission. General tonics and bromides in these cases were an adjuvant to treatment.

PROF. GUSTAV KILLIAN said it was necessary to exclude changes in other organs before making a diagnosis of local spasm. The latter might be primary or secondary. In one case it came from a diseased stomach. In other cases the patient eats too rapidly and does not masticate sufficiently. He had devised an

instrument to illustrate to the patient the effects of insufficient mastication. Such a demonstration had more effect on the patient's mind than any amount of general advice.

The president, Dr. A. W. de Roaldes, wished to call attention to the fact that some of these spasms might be secondary to disease of the nervous system. He had seen the condition in tabes. It might come on not only late in this malady in which clonic attacks were often noted but also in the early stages. In one of his patients the esophageal symptom was the initial evidence of tabes.

Dr. G. Hudson Makuen believed in the existence in many of these cases of a nervous or psychical element. The patients could not swallow because they thought they could not or were afraid they could not. They always did better while under a condition of mental exhilaration. This might arise from the constitutional effect of cocaine when applied rather than to the latter effect on the spasmodic factor. In one of his own patients there seemed to be a unilateral paresis of the pharyngeal muscles.

Dr. Farlow closed the discussion stating that while all that had been said was interesting no one had offered him any suggestions as to treatment of his own case. Exhilaration was not a factor in his own case nor was improper eating. If cocaine was applied when the mouth was full of saliva, it would probably fail to act. In his own patient he would feel loath to pass an instrument of any size down the esophagus, especially when the patient was gasping for breath. Methods of treatment which could be used in dispensary patients with frequent attacks could not be used with patients who went a long time between attacks and were in perfectly good health in the meantime. It was worthy of note that the father and uncle of his own patient were affected in the same way, also an aunt and a sister. In this instance there seemed to be some family peculiarity.

SOME CONSIDERATIONS RELATIVE TO SYSTEMIC INFECTION THROUGH THE TONSILLAR RING.

Paper by Dr. J. L. Goodale, of Boston, Mass.: Dr. Goodale referred to his paper on this topic read before the congress of 1906, and stated that during the past year he had continued his work along the same line. He called special attention to the part played by the system in resisting the invasion by micro-organisms. A series of cases had come under observation illustrating the possibility of the entrance of rheumatic poison through the tonsils. Removal of the latter had generally been followed by improvement, but in one case a continuation of joint symptoms was observed in association with throat symptoms. A detailed history was given of the case. The faucial tonsils are, of all points in the tonsillar ring, the vulnerable point, but after they are removed infection may occur through the lymphoid structures of the posterior pharyngeal wall. Tuberculous infection may occur through normal mucous membrane without leaving any trace discoverable either by the naked eye or by manipulation. In some of the obstinate cases in which infection seems to follow with as great frequency after operation as before it, it seems probable that the cause of frequent bacterial invasion is not attributable as much to a faulty distribution of lymphoid elements as to a predisposition to such infection on the part of the patient himself. Finally we must further study the part played by the host in such cases. When we are called to such a case as has been considered, we must consider not alone the alterations in the tonsils but evidences of lymphoid change in the vicinity. Even if the tissues appear normal we are not able to say that they may not have been in time past channels of entrance for micro-organisms. If the individual in his previous attacks of systemic disease has had coincident disturbances in the throat this fact becomes of great importance. If it is possible to test the opsonic index of the individual with reference to the germs suspected of etiological relation which have been recovered from the throat, confirmatory evidence would thereby be obtained.

Dr. W. E. Casselberry called attention to the chain of lymphatic follicles behind the posterior faucial pillars, the so-called pharyngitis lateralis. This participated in the usual inflammations of the pharyngeal lymphoid tissues. In his opinion it was responsible for some of the systemic infections, as rheumatism, endocarditis, etc. Such glands might be destroyed by the cautery. They often kept up trouble after the tonsils proper had been removed. It was often necessary to extend the cauterization up beyond the level of the velum palati and down into the pharynx.

Dr. Robert C. Myles, of New York, said that the tonsil projecting into the throat was the one to which most attention had been paid, but there were other kinds which were just as dangerous. The crpyts went down deep and there the chief sepsis occurred on account of the moderate amount of epithelium. By properly examining the cervical glands one could tell the pathology of the tonsils without looking at the throat. If the tonsil affection is very definite the glands would be hard. In proportion to their softness, the infection was likely to disappear. Twenty per cent of tonsillar affections were of this variety while 80% were of the palatal tonsil. Some of these tonsils to which he referred were incapable of extirpation, which was a serious matter. Such tonsils might extend three quarters of an inch into the palate. There was danger in operating of setting up cellulitis of the neck. The best course was to clean such a tonsil out and involute it. A certain amount of cervical adenitis might result from the salpingeal folds and they should not be overlooked. Adenoids might cause swelling of the glands in the post-cervical region. No consideration of any tonsil case was complete which ignored the amount of adenitis present. It was difficult to say how often such glands were tuberculous.

Dr. George L. Richards, Fall River, Mass., gave the history of one obstinate case. He had seen cases with periodical attacks of tonsillitis in which it was difficult in the intervals to note any excess of lymphoid tissue, even on separating the palatal folds. In regard to the nature of the glandular inflammation he had found it at times tuberculous, at other times not. Often a tonsillectomy should be followed by enucleation of the cervical glands.

Dr. Francke H. Bosworth, of New York, said that it was our duty to remove diseased lymphatics. Enlarged lymphatics did not necessarily call for removal. If we removed the mechanical condition in the pharynx, destroying the focus that entangled the germs, we did all we were called on to do. It was not our duty to dig out all the lymphoid tissue but to remove the pockets which were the source of the mischief. Invagination of the tonsil was a diseased condition, but unless there were pockets, the condition was not one of disease. The so-called palatal tonsil he did not believe to be an organ of the normal body. A large rounded tonsil projecting into the throat without any follicles did no harm.

Dr. F. C. Cobb said that the logical retention by pockets or anything else tending to obstruct flow from the tonsils would cause more disturbance than a mere inflammation of the tonsil or of the lymphoid tissue. The latter might be a normal protective. At times it was overcome by the invading organisms which gained access to the general circulation. It was a mistake

to obliterate normal tissue simply on the evidence that through it pathological germs occasionally gained access to the system. There was very little sepsis in acute tonsillitis. The tonsil took care of an enormous number of bacteria.

DR. EMIL MAYER called attention to a recent article by Jacobi, taking an entirely different standpoint from that of the theory that there was a direct infection beginning with the lymphatics of the throat.

DR. REGINALD H. FITZ, Boston, president of the Triennial Congress, was invited to participate in the discussion, and said that rheumatism was the disease which most interested the general practitioner so far as the present topic was concerned. Whatever the tonsil might do in some infections, it did not do the same in all. Certain peculiarities of one micro-organism might allow it to pass through the tonsil but perhaps this was not true of all micro-organisms. He did not know whether the result of tonsil extirpation had been determined with regard to its bearing on cases of multiple arthritis. Infections occurring after removal of the tonsils should be investigated in relation to those occurring before operation.

DR. MYLES said that he did not advocate removal of lymphatics when they were protective, but only when they were suppurating.

DR. J. N. MACKENZIE, of Baltimore, referred to some of the former theories as to the function of the tonsil.

The lust for tonsil operations had now reached its zenith. The laity had become infected with the zeal for removal. He thought that the matter of infection through the tonsils had been very much exaggerated. Dr. Goodale had beautifully pointed out the bacteriological side of the question but there was another side — the clinical. He was inclined to think that the modern total tonsillectomy was absolutely unnecessary and sometimes harmful. One should be guided in each case coming under observation by safe and sane conservatism and common sense.

DR. BOSWORTH referred to his statement made in London, twenty-seven years ago, that there were no tonsils in a healthy throat, and believed that the truth of this statement would soon be accepted by all practitioners. The tonsil described by anatomists represented a disease-process.

DR. GOODALE closed the discussion.

PROF. GUSTAV KILLIAN gave a demonstration of various new instruments devised by him for use in bronchoscopy and esophagoscopy, and a general discussion ensued on these operations.

DR. H. P. MOSHER was delighted to have had the opportunity of seeing these new devices. He preferred to have the light on the end of the tube so as to get it as near the foreign body as possible. He had noted that Professor Killian had had to put the suction tube inside the main tube so as to remove the mucus. With the plain, straight solid tube with a light at the end and a smaller tube set into the side of this tube to remove mucus, it was not necessary to introduce a special tube for this purpose. It was of great importance to know how many cases required an emergency tracheotomy tube after the manipulation of passing the tubes through the cords. Such a thing had been called for in this country and he would like to know of the experience in this respect in Germany.

DR. E. FLETCHER INGALS thought that in his practice he found it better to have the light at whichever end would give the most satisfaction. The light at the distal end did not always work well, no matter how bright it was. He preferred a suction tube, one that could be introduced through the main tube, as we needed all the room we could get; the larger the tube the better the lighting.

DR. EMIL MAYER said that very frequently blood would show itself in the mirror obstructing the view when the light was at the distal end. The holding of the light in the hand in the instrument shown was a great advantage. He thought it useless to practice on the cadaver. It was much better to work on the living dog. An injection of morphine kept the animal quiet. One then had conditions approaching clinical practice — the hot air in the face, the mucus and the little blood.

PROFESSOR KILLIAN, in closing the discussion, said that the diameter of an electric lamp must be at least 3 mm., and that the mirror in the tubes would in such cases obstruct most of them. He had found records of 116 cases of tracheotomy after bronchoscopy. In these cases the extraction was difficult and it was necessary to have the tube in position a long time. Personally he had never had such a case. If it was not possible to remove the foreign body through the larynx, we had to do a tracheotomy and also a lower bronchoscopy.

(To be continued.)

Book Reviews.

Outlines of Practical Sanitation, for students, physicians, and sanitarians, by DR. HARVEY B. BASHORE, Inspector for Pennsylvania Department of Health, etc. Pp. 208. New York: John Wiley & Sons. 1906.

This little book is exactly what it purports to be — an outline and not a treatise. It covers in a most sensible and satisfactory manner the chief topics which interest the sanitarian and also, as the preface states, the taxpayer and the citizen. It is wholly unpretentious and will serve to inspire the reader who is not an expert with a desire to go deeper into the subject of practical sanitation by further study.

Text-Book of Comparative General Pathology. For Practitioners and Students of Veterinary Medicine. By PROF. DR. TH. KITT, of Munich. Authorized translation by DR. W. W. CADBURY. Edited with notes and additional illustrations by DR. A. J. SMITH. Chicago: W. T. Keener & Co. 1906.

This translation of Kitt's authoritative work will form a valuable addition to the libraries of veterinary students. It contains much of interest to the student of human medicine. The morphological aspects of the subject are well presented, but special attention is given to disturbances of functions and to the etiology of disease. The author draws attention to the fact that " many of the discoveries of value to human medicine have been made from experimental studies upon animals, and the principles of general pathology particularly have been fundamentally proven by comparative study of the anatomy and physiology of animals, both branches of medicine, therefore drawing from the same sources and having a common field of work." The book is well illustrated and attractively bound.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania Hospital. Fourth edition, revised and enlarged. Philadelphia and London: W. B. Saunders Co. 1906.

We are glad to welcome another edition of this excellent medical dictionary. In connection with the editions which have preceded this we have taken occasion to comment on the excellence of form and arrangement of this dictionary, which, from the standpoint of practicability, is one of the very best we have had occasion to use. Since the previous edition was published the text has been generally revised; new words have been added to the number of over 2,000; the text has been altered and improved, and the tables have been amplified. Particularly noticeable is the increase of illustrations through the addition of six colored plates, illustrating the subjects of appendicitis, diphtheria, gallstones, Leischman-Donovan bodies, measles and nephritis. We take pleasure in recommending this book, as we have before, to practitioners of medicine and others desirous of keeping abreast of the constantly changing terminology of the medical sciences.

Tics and their Treatment. By Henry Meige and E. Feindel. With a preface by Professor Brissaud. Translated and edited, with a critical appendix, by S. A. K. Wilson, M. A., M.B., B.Sc. 8vo, pp. xxii, 386. New York: William Wood and Co. 1907.

The work of Meige and Feindel appeared in French in 1902, and it has ever since been recognized by neurologists as one of the most important contributions to our knowledge of a class of somewhat obscure phenomena that has been published. To the authors we owe the extension of the term "tic" to a large class of semi-purposive movements and the distinction of these movements from the different forms of muscular spasm. To them, too, we are indebted for emphasizing more strongly the relation between the various forms of tic and mental instability. In this connection the confessions of a *tiqueur* which begin the volume will be found of the greatest interest. In addition to their work in demonstrating so clearly and so elaborately the nature of the tics and their great frequency, we are indebted to them still more for having devised a method of treatment in the nature of muscular re-education, which has in many instances effected a cure of a condition which was once regarded as incurable. The present translation reads smoothly and is in one way superior to the original French edition in that it adds various paragraphs from Meige's later monograph, *Les Tics*.

Practical Gynecology. A Comprehensive Textbook for Physicians and Students. By E. E. Montgomery, M.D., LL.D., Professor of Gynecology, Jefferson Medical College; Gynecologist to the Jefferson Medical College and St. Joseph's Hospitals; Consulting Gynecologist to the Philadelphia Lying-In Charity and the Kensington Hospital for Women. Third revised edition. 970 pages, 574 illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

This edition of Dr. Montgomery's textbook contains 81 pages more than the second edition and 151 more than the first edition. The table of contents occupies 14 pages and amounts to an index in its fullness, perhaps because of the peculiar classification. Here are the twenty chief headings: Introduction, Etiology, Diagnosis, Pelvic Examination, Animal Parasites, Abdominal Examination, Therapeutics, Medical Treatment, Local Therapeutics, Electricity, Embryology and Anatomy of the Genito-Urinary Organs of the Woman, Physiology, Malformations, Traumatisms, Inflammations, Inflammation of the Cervix and Body of the Uterus, Displacements of the Pelvic Organs, Genito-Urinary Hemorrhage, Extra-Uterine Pregnancy, Genital Tumors.

It is difficult to account for the position of the heading Animal Parasites, especially as under it comes a lengthy description of blood examination and exploration of the urethra, bladder and ureters. Under Therapeutics comes first the description of the technique of abdominal operations. The student would soon be lost if it were not for this lengthy table of contents and a very good index. There are some new illustrations in this edition. Most of these plates are worn and are much less distinct than in the first edition, especially those depicting microscopic specimens. We are glad to see a correct illustration of the Sims position, seldom found in textbooks on gynecology. A little embryology has been added to the chapter on the anatomy of the female genito-urinary organs and changes in the illustrations are to be noted here. Vesico-vaginal fistula was removed from the chapter on malformations and put among the traumatisms in the second edition. The figures as a whole are not arranged so as to help the reader as much as they were in the first edition. For instance, those illustrating the relative zones of dullness and resonance in ascites and in ovarian tumors, instead of being on pages facing each other where they may be compared, are back to back. The same confusing multiplicity of operations for the repair of lacerations of the perineum observed in the first edition is to be found in this. The Gilliam-Ferguson operation for shortening the round ligaments with Montgomery's modification is introduced into the chapter on retroversion; this in the way of improvement and bringing the book up to date. On the other hand, many archaic operations, such as the Stolz pursestring operation on the anterior wall of the vagina and the Sims operation for anteversion still find a place in the book.

The portions of this book that mirror the author's extensive experience are of great value to the student and practitioner, but the complications and the illustrations, to say nothing of the classification, leave much to be desired when compared with other recent works of a similar character.

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THE ALARMIST PHYSICIAN.

THE attitude of the physician toward his patients is no doubt usually determined by his personality and general attitude toward his professional work. It is difficult, if not impossible, to lay down any laws by which a physician should be governed in the treatment of his patients outside of the prescription of drugs and remedial agents. No doubt, human nature is much the same now as it always has been, but considerable recent discussion has again called attention to the relation of the physician to his patient, and it is, perhaps, worth while to reconsider the matter from the standpoint of various recent observations.

A type of physician which still exists, but which on the whole we are inclined to think is becoming rarer, is the alarmist,— a man whose training and attitude of mind are such that he looks with natural pessimism on conditions of illness, however vague his special knowledge on the subject may be. We are still continually being brought in contact with men who give a bad prognosis, not so much from a careful weighing of all the facts in the case as from a general disposition of mind which is so impressed with the grewsomeness of life that it finds it almost impossible to look upon the bright side. It is quite astonishing at times to meet with physicians who calmly and conscientiously condemn their patients to lives of invalidism or premature death on grounds which to another man would permit of no such gloomy outlook. This attitude of mind, we are convinced, is far too prevalent. It requires no wide experience to meet with patients continually who are cast down with discouragement because of a hopeless prognosis which has been made of their condition, often by men of high standing in the profession.

We are, no doubt, too prone to forget the deep significance which patients are disposed to attach to the statements of their physicians and the manifold neurotic conditions which may arise in consequence of such statements. It is therefore altogether desirable that we should know clearly whereof we speak before we make any dogmatic assertions of a depressing sort to our over-solicitous and sensitive patients. The harm which is done through carelessness in this regard is not to be lightly estimated. Cases, no doubt, will suggest themselves to any physician of wide practice in which an inadvertent, or possibly a considered, statement on the part of a physician has led to most distressing results for the peace of mind of the patient.

There are certain matters which seem sufficiently apparent in the present state of our knowledge to permit of dogmatic statement. The first is that in any individual case we know extremely little about prognosis, and certainly have no right to be dogmatic as to the duration of life. No more striking example of this could be adduced than the change which has come over the medical profession, and secondarily over the laity, in regard to the outcome of tuberculosis. The horror of inevitable and more or less speedy death has been replaced by a feeling of hopefulness which now permeates every element of society and has practically robbed the disease of its terror. The same is true in lesser degree of many other diseases. The prognosis of various affections has absolutely changed in the lifetime of many physicians now living. In view of these facts, it is rather the part of ignorance than of knowledge to condemn a person to death, even if suffering from a disease which is ordinarily regarded as fatal. As a practical policy it is well always to give the patient the benefit of the doubt.

In the second place, even if we think we are practically sure of our knowledge regarding the prognosis of any affection, it is manifestly unwise in a great majority of cases to express that opinion to our patients. The world is sufficiently full of misery without adding any more which can possibly be avoided. Our honesty and the good of the community will not suffer thereby. Dr. F. C. Shattuck has recently admirably summed up the situation in an address before the graduating class in medicine of the Yale Medical School. He says in part: "What is truth? In matters medical we are dealing with x, y and z, and we must never forget that our opinion does

not necessarily represent the truth. The truth as we see it may not be the truth itself. In telling the truth as the truth, we should be very sure that it is the truth, especially if in so doing we condemn the patient to an incurable and painful malady. There is generally a near friend or relative to whom we can speak frankly if we like, expressing our fears, from which we should not be too ready to take counsel. But, apart from our liability to error, it seems to me that every practitioner now and then meets a case in which neither silence nor skillful evasion avail, and in which telling the truth is sheer cruelty. . . . Doubtless, ordinarily, the truth, which may be stated with brutal frankness or with delicate consideration, is best for all concerned, especially if it be served with the saving grace of 'as I see it,' or its equivalent."

As a guide to conduct we need hardly go further than this, nor can the most captious critic maintain that our morals will suffer thereby.

POLIOMYELITIS IN NEW YORK.

At present nearly one hunderd cases of poliomyelitis are being treated at the Hospital for Ruptured and Crippled, and in view of the prevalence in the city of this disease, so disastrous in its permanent results, and also of the fact that outbreaks of the affection have recently occurred in several localities within a radius of two hundred miles of New York, a systematic campaign against the disease has been undertaken. The plan of this has been mapped out by Dr. J. F. Terriberry, neurologist to the hospital mentioned above. Taking it as a highly probable point that the disease is due to a specific germ, a circular has been prepared, to be sent out to physicians generally, in which the request is made for such reports as would do much toward establishing at least the usual surroundings in which the disease occurs most frequently, and thus afford some idea of the conditions favorable to the development and growth of the supposed morbific organisms. Among the conditions, which it is suggested should be reported upon, are the following: Temperature, humidity and analogous conditions; natural peculiarities of the region, whether urban or rural, and with especial emphasis as to sunlight; whether epidemics of other diseases were occurring at the same time; the amount of area covered by the outbreak; the source of the water supply. The query in reference to other epidemics was occasioned by a recent report from Ridgway, Penn., to the effect that simultaneously with the infantile paralysis, typhoid fever and epidemic cerebrospinal meningitis were prevalent. In addition to the cases now under treatment at the Hospital for Ruptured and Crippled a large number are being treated at the New York Orthopedic Dispensary and Hospital and other institutions in Manhattan and Brooklyn. A great handicap in the way of successful treatment is that the cases are not brought to the hospital in the acute stage. It is only when the febrile condition has run its course, and the characteristic phenomenon, the muscular paralysis, has developed that the patients are brought, and permanent disability is very liable to result.

BLINDNESS FROM BIRTH.

The recent meeting in Boston of the American Association of Workers for the Blind was productive of the dissemination of much knowledge regarding this unfortunate class which is not generally known. One of the statements made was that nearly 70% of the existing cases of blindness might have been prevented, since the blindness was due to an ophthalmia at birth which naturally is avoidable in the great majority of cases. Could the infants be cared for at this early stage and the proper remedy supplied, there is no doubt that more than half the blindness in the world might be entirely obviated. From a theoretical standpoint this is an easy statement to make, but to educate the people and to put laws in operation which would control this disease of early life, are matters somewhat difficult of accomplishment. In Prussia it is said a law exists providing that every case of ophthalmia or conjunctivitis during the first two weeks of life must be reported in the same way as other contagious diseases. Could such a law be enforced, no doubt its results would be far reaching in their benefit, and there seems to be no inherent reason why it should not be, provided both the laity and physicians could be educated up to a recognition of its necessity. As in all other classes of human defects, the state is ultimately burdened with the support of many of the blind. For practical reasons, therefore, quite apart from humanitarian motives, it is altogether desirable that definite and immediate action be taken to minimize this largely preventable evil.

MEDICAL NOTES.

Cholera in St. Petersburg. — Cholera is reported as epidemic in St. Petersburg.

SLEEPING SICKNESS. — Favorable reports come from South Africa relating to Professor Koch's investigations on sleeping sickness. Excellent results are said to have followed the treatment which Koch and his assistants have instituted, and he is being well received by the native population.

CANADIAN JOURNAL OF MEDICINE AND SURGERY. — The current number of the *Canadian Journal of Medicine and Surgery* is this year published in connection with the meeting in Montreal of the Canadian Medical Association. It is an elaborate number, with many illustrations, which are particularly interesting from the fact that they picture various hospitals, sanatoria and various institutions in Canada, as well as some of the most striking scenery within its confines.

PLAGUE IN SAN FRANCISCO. — Owing to the continuance of plague in San Francisco, it is stated that the Public Health and Marine-Hospital Service has been given charge of measures to stamp out the disease. This step has been taken on the initiative of the mayor of San Francisco. It has been recommended that a hospital in which there has been a number of plague cases should be burned. A spread of the disease is not anticipated.

TRANSMISSION OF CANCER.— The subject of the infection of houses with cancer has again come up for discussion in Paris. A census is said to be in progress to investigate houses in which persons have died of cancer. For many years the possibility of infection of dwelling places has been entertained, and, in fact, was one of the matters which led to the theory of the infectiousness of the disease by means of micro-organisms.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Sept. 11, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 15, scarlatina 26, typhoid fever 28, measles 14, tuberculosis 41, smallpox 0.

The death-rate of the reported deaths for the week ending Sept. 11, 1907, was 19.62.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 7, 1907, was 232, against 228 the corresponding week of last year, showing an increase of 4 deaths and making the death-rate for the week 19.85. Of this number 122 were males and 110 were females; 223 were white and 9 colored; 160 were born in the United States, 66 in foreign countries and 6 unknown; 52 were of American parentage, 157 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 29 cases and 2 deaths; scarlatina, 29 cases and 0 deaths; typhoid fever, 21 cases and 1 death; measles, 7 cases and 0 deaths; tuberculosis, 38 cases and 23 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 11, whooping cough 0, heart disease 15, bronchitis 2 and marasmus 12. There were 7 deaths from violent causes. The number of children who died under one year was 93; the number under five years, 106. The number of persons who died over sixty years of age was 34. The deaths in public institutions were 89.

There was 1 case and 1 death reported from cerebrospinal diseases during the week.

ADDITION TO ST. ELIZABETH'S HOSPITAL. — The St. Elizabeth's Hospital Corporation, of Boston, has secured property adjoining the hospital which will be improved for purposes of the institution.

BEQUESTS TO HOSPITALS. — By the will of the late Mrs. Margaret E. Langdell, of Cambridge, Mass., the Cambridge Hospital receives $10,000 for the establishment of two free beds, and the Holy Ghost Hospital for Incurables, also in Cambridge, receives $10,000 without specification as to its use.

FINE FOR NEGLECT OF QUARANTINE REGULATIONS. — On Thursday, Aug. 22, 1907, in the Municipal Court of Boston, the captain of the fishing vessel, *Flora S. Nickerson,* was fined twenty-five dollars for violation of quarantine regulations of the port of Boston adopted by the local Board of Health. His offence consisted in bringing a case of smallpox into port without anchoring for inspection at the quarantine station.

STATE COMMISSION ON CONSUMPTION. —Dr. Arthur T. Cabot has been appointed chairman of the new Massachusetts State Commission on Consumption, the functions of which are to attend to the building of hospitals and to disseminate information in regard to methods of overcoming the disease. It will be remembered that when Dr. Cabot was president of The Massachusetts Medical Society he took a particularly active interest in the matter of tuberculosis and did much pioneer work toward devising means of combating the disease.

Surgical Appliances for Factories and Shops. — In compliance with an Act of the Massachusetts Legislature the Boston Board of Health requires the following medical and surgical appliances to be kept and maintained by factories and shops in Boston: 2 elastic tourniquets (minimum, 24 inches); 2 rolls ½-inch zinc oxide adhesive plaster; 2 rolls 2-inch adhesive plaster; 4 dozen gauze bandages, assorted sizes, from 1 to 4 inches; 1 lb. absorbent cotton; 1 yard sterile gauze; 1 dozen emergency slings; 5 yards Canton flannel (used with carron oil for burns); 1 pair scissors, straight (2½-inch blade); 500 tablets 1¾-gr. corrosive sublimate and citric acid; 6 whitewood strips, 40 x 4 x 3-16; 2 pillows; 1 package of pins; 3 dozen safety pins; 8 oz. spirits ammonia, aromatic (rubber stopple); 1 gallon carron oil; 1 pint brandy; 1 basin.

Physical Training, Boston Public Schools. — Dr. Thomas F. Harrington, formerly of Lowell and now of Boston, has been appointed director of athletics and physical training in the Boston public schools. Dr. Margaret E. Carley has been appointed supervisor of nurses, with twenty assistants. The School Board has for some time been preparing to reorganize the department of physical training, and it is fortunate in having secured Dr. Harrington to undertake this work. Dr. Harrington is to have charge of this reorganization with such assistants as he may require. He is also to have charge of the vacation schools and the playgrounds, which were not included in the duties of his predecessor. Dr. Harrington is a graduate of the Harvard Medical School and was the author of the recently published history of the school.

Opening of Out-Patient Department, Boston Consumptives' Hospital. — The trustees of the Boston Consumptives' Hospital on Sept. 11 opened an out-patient department for the treatment of pulmonary tuberculosis at 13 Burroughs Place, Boston. For the present this out-patient department will be opened for the examination and treatment of patients on Mondays, Wednesdays and Fridays at 10 A.M. It is intended later to open the department during the evening. Persons who have any reason to believe that they are threatened with consumption are urged to present themselves at the out-patient department for examination, and physicians are requested to send such patients as they deem need attention. Persons desiring admission to the consumptives' wards at the Holy Ghost Hospital, Carney Hospital and St. Monica's Home should present themselves at the out-patient department on Mondays, Wednesdays and Fridays at 11 A.M.

NEW YORK.

Boiling of City Water. — On account of the lowness in the reservoirs, due to the lack of rain during the past summer, which naturally tends to the concentration of impurities, President Darlington of the Health Department has advised that for the present the city water should be boiled before drinking. The mortality from diarrheal diseases continues considerably higher than at the same season last year.

A Case of Simulation. — Justice Brady of the New York Supreme Court has affirmed the sentence of Alpheus S. Frank, an attorney, who was recently convicted of subornation of perjury by a jury in the Westchester County Court, and sentenced by Judge Platt to a term of three years in Sing Sing prison. Frank, who was formerly a chief clerk for the claim department of the New York City Railway Company, was found guilty of preparing a fake trolley suit brought by one Mae Herbert, of New York, against that company for damages for personal injuries. On the trial it was shown that Miss Herbert had sued under a false name, as she was in reality the wife of Abbott Woods, who was conductor of the car from which she claimed to have fallen. It was also shown that the woman was formerly a circus tumbler and contortionist, which enabled her to leap from cars at full speed without hurting herself. She had an old injury, received by falling from a trapeze, which she exhibited for the purpose of proving her case; and it is said that she had figured in several successful suits of the kind before her identity was discovered.

Contamination of Hudson River Water. — Pursuant to an order issued by Governor Hughes on Aug. 10, a commission of sanitary engineers has been making an investigation of the waters of the upper Hudson, and its report, together with the findings observed in the State Hygienic Laboratory at Albany, which was communicated to the State Health Department on Sept. 1, shows that pollution of these waters is so extensive as to constitute a nuisance. The investigation covered the counties of Washington, Warren and Saratoga, and it was found that the upper Hudson River and its tributaries were polluted by the industrial waste from thirty-five pulp and paper mills, ten knitting mills, eight woollen mills, seven wall-paper mills, and three cotton-

print mills, in the states of New York, Vermont and Massachusetts, and by the domestic sewage of a population of some 79,000 people. The total pollution from industrial waste is reported to amount to about 1,460,000 pounds daily.

MEETING OF AMERICAN PHARMACEUTICAL ASSOCIATION. — The fifty-fifth annual meeting of the American Pharmaceutical Association was held at the Hotel Astor during the first week of September, this being the first time for forty years that the society had met in New York. On Monday, the opening day, addresses were made by the president, Leo Eliel, of South Bend, Ind., and a number of others. Among those who spoke were: Dr. S. Solis Cohen, of Philadelphia, who presented the greetings of the American Medical Association; Dr. Harvey W. Wiley, of the Bureau of Chemistry, United States Department of Agriculture, who stated that the Pure Food and Drug Law was passed because it had the power of the great organizations behind it; Prof. José Diaz, of Havana; Paul J. Waldner, of the Naval Laboratory, Brooklyn; Prof. W. M. Searby, of the San Francisco College of Pharmacy, and Dr. William C. Alpus. The latter said that during the last year over $200,000 worth of pharmaceutical supplies had been exported and imported by the United States. On Sept. 3, the following officers were elected: President, William M. Searby, California; first vice-president, Oscar Oldberg, Chicago; second vice-president, Prof. Henry H. Rusly, New York College of Pharmacy, Columbia University; third vice-president, Charles Holzhauer, Newark, N. J.; general secretary, Prof. Charles Gaspari, Jr., Baltimore College of Pharmacy, University of Maryland; treasurer, S. A. D. Sheppard, Boston. Hot Springs, Ark., was chosen as the next place of meeting.

Current Literature.

MEDICAL RECORD.
AUGUST 17, 1907.

1. *SCHMEIDEN, V. *The Treatment of Surgical Tuberculosis by Hyperemia (Bier).*
2. POSEY, W. C. *The Ophthalmological Phase of Diseases of the Accessory Sinuses of the Nose.*
3. CUTLER, C. W. *Relations of Eye to Nose, with Certain General Conditions.*
4. WRIGHT, J. *Evolution of Life from the Lifeless.*
5. FERRIS, A. W. *The Manifestations of Paranoia.*
6. BRADSHAW, J. H. *Acute Intussusception. With a Report of a Case of Successful Resection of a Portion of the Ileum for Gangrenous Intussusception.*
7. MULOT, O. L. *Reflections on Methods of Teaching Medicine.*

1. Schmeiden describes Bier's treatment of tuberculosis of the joints by hyperemia, as used by himself. His method depends on the recognition that inflammatory reaction in the infected parts is an effort of the system to protect itself against the bacilli, and that there is benefit in increasing artificially redness, swelling, and heat of the part. For this purpose he uses the blood by increasing hyperemia and at the same time decreasing the flow of blood to the joint. The hyperemia is produced by a broad rubber bandage, applying it evenly about the limb proximally and not too close to the joint. The bandage must not cause pain at the point of constriction or in the joint, and the extremity must remain warm and the pulse unchanged. The bandage is applied for a few hours per day with intermissions. The joint must not be kept in fixation, while violent motion is not allowable. The object is to obtain anatomical healing, with mobility of the joint. Pain and inflammatory contractures disappear, active and passive motions become possible, swelling subsides, large fungous masses are absorbed, and fistulæ close. That cold abscesses form is no contra-indication to treatment; this is only the attempt of nature to throw off the dead tissues. This treatment is so simple that it may be applied by the patient himself, and he may attend clinics. Resection is usually unnecessary. The best results are obtained in the shoulder, elbow, wrist and small joints. The hip and knee cannot be successfully treated. Exudative inflammation is not treated by hyperemia. Cupping glasses are used for the breast, for gland and fistulæ.

NEW YORK MEDICAL JOURNAL.
AUGUST 17, 1907.

1. BLACKBURN, I. W. *Hypernephroma.*
2. *BOSTON, L. N. *A Valuable Sign in Exophthalmic Goitre.*
3. WILLIAMS, L. R. *The Physical Reconstruction of School Children by Means of Fresh Air.*
4. BIERHOFF, F. *Police Methods for the Sanitary Control of Prostitution.*
5. JACKSON, C. *Ligation of the External Carotid in Rhinology and Pharyngology.*
6. BRADDOCK, C. S. *Some Notes on Malarial Fever as Seen in the Jungle.*
7. FULLER, A. L. *Two Cases of Profound Mental Disturbance Due to Pelvic Disease Cured by Operation.*
8. KINCH, C. A. *Eczema in the Second Year of Life.*

2. In fifteen cases of Graves's disease Boston found spasm of the upper lid, when the patient attempted to rotate the eye from above downward.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
AUGUST 17, 1907.

1. WELCH, W. H. *The Relation of the Hospital to Medical Education and Research.*
2. DA COSTA, J. C. *The Old Jefferson Hospital.*
3. SHAMBAUGH, G. E. *The Preparation of the Specialist, a Problem in Medical Education.*
4. SHAMBERG, J. F. *The Present Status of Phototherapy.*
5. KESSLER, J. B. *Blastomycosis in an Infant.*
6. ALLABEN, J. E. *Intestinal Perforation in Typhoid Fever. Its Diagnosis and Surgical Treatment.*
7. CLARKE, J. F. *A Case of Infantile Myxedema.*
8. *MEYER, W. *Bier's Treatment ("Stauungs-hyperemie") in Chronic and Acute Surgical Infectious Diseases.*
9. *WRIGHT, A. E. *Principles of Vaccine Therapy.* (Concluded.)
10. HARVEY, P. F. *Evolution of Medical Education in the Army.*

8. Meyer has used Bier's method of hyperemia in many conditions. He finds it especially satisfactory in bone and joint tuberculosis. Its advantages are the rapid alleviation of pain, the excellent ultimate functional results, and the possibility of home treatment, or even while at work. It has been found that the shorter and firmer application of the constricting bandage, *i. e.*, one hour in the morning and one to two hours at night, is even more efficacious than the prolonged use, *i. e.*, for six to twelve hours continuously. The disadvantages are the necessity of care in the details of application and the long time required, at least several months, for cures.

Meyer has secured gratifying results in a multitude of acute surgical infections. He uses glass cups on boils and carbuncles and proposes to treat meningitis by a band constricting the neck.

9. Wright gives a summary of the principles of his so-called vaccine treatment. He discusses the theory of opsonins and the action of vaccines. He reiterates the advantages of this treatment in localized infections, recording two cures in a series of six cases of streptococcal septicemia. [R. I. L.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.
JUNE–JULY, 1907.

1. *BARKER, L. F. *The Organization of the Laboratories in the Medical Clinic of the Johns Hopkins Hospital.*
2. *MORRIS, R. S. *Note on the Occurrence of Howell's Nuclear Particles in Experimental Anæmia of the Rabbit and in Human Blood.*
3. *MORRIS, R. S. *Blood Formation in the Liver and Spleen in Experimental Anæmia.*
4. *HINMAN, F., AND SLADEN, F. J. *Measurement of the Coagulation Time of the Blood and its Application.*
5. STROUSE, S. *On Wright's Method of Measuring the Alkalinity of the Blood.*
6. *COLE, R. I., AND MEAKINS, J. C. *The Treatment of Gonorrhæal Arthritis by Vaccines.*
7. *JEANS, P. C., AND SELLARDS, A. W. *The Tuberculo-Opsonic Index and Treatment by Tuberculin.*
8. *MOSS, W. L. *Studies on Opsonins.*
9. KLEIN, H. *The Opsonins in Typhoid Immunity.*
10. RUSSELL, F. F. *Studies on the Specificity of Opsonins in Normal and Immune Serum.*
11. *MEAKINS, J. C. *The Method of "Fixation of the Complement" in the Diagnosis of Meningococcus and Gonococcus Infections.*
12. MEAKINS, J. C. *"Diversion of the Complement" in Hæmolysis.*
13. COLE, R. I. *Note on the Production of an Agglutinating Serum for Blood Platelets.*
14. *HIRSCHFELDER, A. D. *Some Observations upon Blood Pressure and Pulse Form.*
15. HIRSCHFELDER, A. D. *Some Variations in the Form of the Venous Pulse.*
16. HIRSCHFELDER, A. D. *The Rapid Formation of Endocarditic "Vegetations."*
17. *BARKER, L. F., AND VOEGTLIN, C. *The Calcium, Magnesium, Phosphorus and Nitrogen Metabolism and the Organic Acidity of the Urine in a Case of So-called "Phosphatic Diabetes" with Comments upon an Interesting Form of Acidosis.*
18. KING, J. H. *A Study of the Metabolism in a Case of So-called "Arthritis Deformans."*
19. HARRIS, N. MACL. *A Method of Preparing the Romanowsky Stain.*
20. *BAER, W. S. *The Operative Treatment of Subdeltoid Bursitis.*

1. Barker's article is a concise description of the laboratories of the Johns Hopkins Hospital, their organization and development. The value of clinical and also of research laboratories in close connection with the medical clinic is clearly set forth. This number of the *Bulletin* publishes the reports of work done in these laboratories for the past year.

2. Morris reports his observations upon nuclear bodies, first described by Howell, as occurring in the blood of cats after severe hemorrhage. Morris has seen these bodies in experimental anemia of rabbits, in a case of pernicious anemia in man, in the blood of a human embryo and in human blood in other conditions in which nucleated red blood corpuscles were present. It is thought possible that they result either from atrophy of the nucleus or as products of the nucleus.

3. In a second paper Morris demonstrates that the liver and spleen in severe anemias may resume their embryonic rôle as blood-forming organs. This it is probably to be regarded as an effort to increase blood production to compensate an abnormal blood destruction.

4. Hinman and Sladen publish a critical description of methods which have been used to determine the time of coagulation of blood. Least liable to objections they find the Brodie-Russell method as modified by Boggs and an original simple modification of Milian's slide method. This latter method, from its simplicity and accuracy, deserves wide recognition. It is performed by simply touching a drop of blood from the ear with the under side of a glass slide held horizontally so that a drop 4 to 5 mm. in diameter shall adhere to the slide and observing the time from the instant that the drop has begun to flow from the ear until changing the slide from horizontal to vertical position no longer causes a change in contour of the drop. The diameter of the drop on the slide is important, since the average normal coagulation time for a drop of 4 mm. is about 6 minutes and for a drop of 5 mm. is about 9 minutes. The readings agree in general with those made in the same cases by the Boggs Brodie-Russell instrument. Coagulation tests were made in a number of pathological cases, the greatest delay in coagulation time noted being in jaundice, due to malignant disease. Experiments were made as to the influence of calcium salts in reducing the coagulation time. These were found to have marked effect in increasing the coagulability for three to five days, when given in doses of 15 gr. of the lactate, in syrup or in capsules, four times a day. When this dose had ceased to have effect, increasing the dose every three to five days maintained the low coagulation time for a longer period. Sodium citrate, on the other hand, seemed to increase coagulation time.

6 and 7. The articles of Cole and Meakins and of Jeans record observations in the treatment of gonorrheal arthritis and of tuberculous infections by bacterial vaccines and tuberculin (TR) respectively, controlled by the opsonic index. The results of treatment in both instances are considered sufficiently favorable to warrant further investigation. The value of the opsonic index as a means of control is thought to be open to question.

8. Moss reports the results of experiments with rabbits to determine the effect of injections of bacterial vaccines and of living bacteria upon the opsonic content of the blood. He determined the opsonic index by Wright's method and the phagocytic index advocated by other investigators; he also investigated the action of the sera obtained in different degrees of dilution. The opsonic index seemed to give the most reliable results, but throughout the work so many inconsistencies of results and so many sources of error as yet not overcome were encountered, that it is concluded that none of the present methods of estimating the opsonic content of the blood are sufficiently accurate to be of practical value. Furthermore, in spite of necessary inexactness of the tests, it is clear that no high degree of opsonic immunity, such as is possible in antitoxic and bactericidal immunity, can be produced in rabbits by ordinary inoculation procedures with staphylococcus aureus.

11. Meakins has applied the procedure of testing for "fixation of the complement" to meningococcus and gonococcus infections with positive results in all of six cases except one (possibly a misprint in the table). The test is performed by mixing (1) the patient's serum, in various dilutions, inactivated by heat; (2) bacterial emulsion, and (3) normal serum containing complement, and incubating the mixture for half an hour. In positive cases the complement is bound to the bacteria receptors by the antibodies of the patient's serum, and on the addition of red blood corpuscles and inactivated hemolytic serum the complement necessary to hemolysis being "fixed" in this union, no hemolysis can occur. In the control cases, on the other hand, the same process results in hemolysis. The technic is too complicated for use in routine diagnosis, but in the study of special cases the procedure is believed to be of value.

14. Hirschfelder describes various methods of estimating minimal blood pressure. That of Erlanger is by far the most accurate, but the bulk and expense of the apparatus preclude its general use. Other methods are less reliable. That of Strasburger, widely employed in Germany, is worthy of some attention. According to this, the pressure on the upper arm is measured up to which the volume of the radial pulse is maximal. In skilled hands Hirschfelder admits that the results of this method are accurate. To insure uniform palpation it is well to rest the tips of the finger against the radius and to feel the artery with the ball of the finger. The average of not less than six readings should be taken for the final result. For maximal

pressures the Riva-Rocci instrument with the broad band may be used; readings with this average 5 mm. lower than with the Erlanger apparatus. The practical importance of these readings lies in the fact that the maximal pressure is a measure of the intraventricular pressure of the heart, and the minimal pressure is a measure of the resistance in the vessels. The dicrotic pulse of typhoid is to be attributed to peripheral dilatation with somewhat increased heart action.

17. Barker and Voegtlin report results of an investigation of the metabolism of a case of so-called phosphatic diabetes. The phosphorus excreted was found to be in excess, especially the organic phosphorus. The nitrogen excretion was extremely high. Calcium was excreted in excessive amounts, whereas the magnesium metabolism was normal. The acidity of the urine was variable, but at times very high, especially from organic acids which could not be identified. No acetone, diacetic or lactic acids were present. Tests for alimentary glycosuria were negative.

20. Baer calls attention to the fact, demonstrated by Finney, Codman and others, that causes of limited motion of the shoulder joint are not necessarily in the joint proper, but may lie in changes in the subdeltoid bursa. In acute inflammation of this bursa the treatment is that of any bursitis plus putting the arm at rest. In chronic cases, in which the bursa has become a mass of fibrous tissue, simple breaking up of adhesions under an anesthetic is not considered sufficient. Baer advocates incision and complete removal of the remains of the bursa. He reports four successful cases of this operation. [F. W. P.]

BRITISH MEDICAL JOURNAL.

AUGUST 17, 1907.

1. WILLIAMS, P. W. *Remarks on the Effects of Respiration on the Circulation, and the Pulsus Inspiratione Intermittens vel Pulsus Paradoxus.*
2. GOODALL, E. W. *Clinical Observations of the Prodromal Period of Some of the Acute Infectious Diseases.*
3. ROBINSON, W. *On Bottle-maker's Cataract.*
4. EMANUEL, J. G. *A Case of Congenital Obliteration of the Bile Ducts in which there was Fibrosis of the Pancreas and of the Spleen.*
5. ABRAHAM, P. S. *The Ring-worm Question in Elementary Schools.*
6. ARMUGAM, T. V. *Transplantation of the Ureters.*
7. CAMPBELL, H. *Diuretic Action of Theosine Sodium Acetate.*
8. NIXON, J. A. *Acquired Syphilis in an Infant, with Transmission to the Mother.*

THE LANCET.

AUGUST 17, 1907.

1. WRIGHT, A. E. *A Lecture on the Principles of Vaccine Therapy.* (To be continued.)
2. BYERS, J. W. *An Address on Medical Science and School Hygiene.*
3. *ABRAM, J. H. *Cleido-cranial Dysostosis.*
4. KERRAWALLA, M. P. *Notes on a Case of Carcinoma of Both Ovaries.*
5. *MOYNIHAN, B. G. A. *On the Continuous Administration of Fluids by the Rectum in the Treatment of Acute General Peritonitis.*
6. BARWELL, H. S. *A Note on Hypopharyngoscopy.*
7. SUTCLIFFE, W. G. *Note on a Case of Thyroid Tumour.*
8. KELYNACK, T. N. *Tuberculosis among School Children.*

3. There are some 28 cases of this disease on record. The leading features are: (1) aplasia of clavicles; (2) exaggerated development of the transverse diameter of the cranium; (3) delay in ossification of the fontanelles; and (4) hereditary transmission. In other words, a hereditary general bony defect with predominance on a certain bone group. Abram's case had complete absence of any bony tissue in the clavicle, open fontanelles, and typical head. There was no hereditary element traced. His case was a boy of sixteen years, four feet and a half tall, generally stunted. Yet he was muscularly strong and intelligent.

5. Moynihan gives his enthusiastic approval to the continuous administration of salt solution by rectum, not only in acute peritonitis, but also after surgery on the stomach. He allows the fluid to flow at the rate of one pint an hour. He has given as much as sixteen pints in twenty-four hours, and twenty-nine pints during a period of three days. He considers that this method is safe and easily borne by patients, that it effects a remarkable change in their appearance and prospects for recovery after serious abdominal operations, and that the retention of such large quantities of fluid does not throw too much of a strain on the kidneys. [R. I. L.]

ZEITSCHRIFT FÜR KLINISCHE MEDIZIN. BD. 62. FESTSCHRIFT ZU LEOPOLD RITTER SCHRÖTTER V. KRISTELLI.

1. *BAÜMLER, C. *Form and Function Adaptation of the Body with Congenital and Acquired Pulmonary Defects.*
2. *BOUCHARD, C. *The Blenorrhagic Nature of Vertebral Rheumatism.*
3. *WEICHSELBAUM, A. *The Anatomy, Etiology and Epidemiology of Sweating Sickness (Febris Miliaria).*
4. *HOCHENEGG, J. *The Diagnosis and Clinical Significance of Symptomatic Varicocele in Malignant Renal Tumors.*
5. KOBERT, R. *Some Pyrazolon Derivatives.*
6. CHIARI, O. *The Author's Operation for Cancer of the Larynx.*
7. *BURGER, H. *The Relation of Laryngeal Tuberculosis to the Treatment of Pulmonary Tuberculosis.*
8. PIENIAZEK. *Respiratory Movement and Respiratory Distress in Diseased Conditions of the Organism.*
9. *LUBLINSKI. *Glandular Fever.*
10. *GROSSMANN, M. *Bronchospasm.*
11. KATZENSTEIN, J. *The Thoracic and Falsetto Voice.* (To be continued.)

1. Baümler reports two cases in each of which there was congenital agenesia of one lung, without any deformity of the thorax and no interference with the normal development of the body. This illustrates the power of the organs of the body to adapt themselves to abnormal conditions, and yet preserve their function. It seems to show that the bony thorax has a considerable inherent power of development, independent of the organs within. In most acquired pulmonary conditions this is hindered by the development and subsequent contraction of fibrous adhesions. That this is not always the case, however, is illustrated by a third case of fibroid phthisis of twenty-five years' duration, in a woman of thirty-five, in whom there was no deformity of the thorax.

2. Bouchard emphasizes the importance of gonorrhea as an etiologic factor in many cases of spinal arthritis, especially the milder types, affecting the cervical and dorsal vertebræ. It may develop coincident with the urethritis or long after. In the latter cases often there has been a persistence of gonococci in the genital adnexa, without local symptoms.

3. Weichselbaum has studied three epidemics of febris miliaris (Schweissfriesel or sweating fever). This disease suddenly appears in epidemic form, localized to a small region. Its duration is short. It affects largely adults between twenty and fifty and females in very large proportion. It usually appears in damp, warm weather. Its chief characteristics are fever, sweating and a papulovesicular exanthem. Weichselbaum considers it a disease *sui generis*. The subcutaneous emphysema, which so often appears post-mortem in these cases, is due to the Bacillus aërogenes capsulatus (Welch), but Weichselbaum does not think there is any proved etiological relation between this organism and the disease. The skin lesions are inflammatory in nature, not the result of sweat retention. The mortality in these three epidemics was 5.9%, 32.3% and 16%, respectively. Weichselbaum autopsied four cases. The lesions were those common to acute infectious diseases. The disease is contagious in only a very limited degree. Its etiology remains unknown.

4. Hochenegg calls attention to the occurrence of varicocele as a diagnostic sign of malignant tumor of the kidney in the male. It occurs on the same side as the tumor and differs from idiopathic varicocele in appearing rapidly at a more advanced age, in being less painful and in not disappearing in the prone position. It is due to tumor growth in the spermatic vein, pressure from metas-

tases about it, direct compression of the vein by the renal tumor, or a kink in it, due to displacement of the kidney. If caused in the last two ways, the varicocele subsides in the knee-elbow position, or when the tumor mass is normally moved. If due to the first two causes, it does not subside in these positions and this is a contra-indication to operation, since it indicates wide extension of the tumor.

7. The seriousness of tuberculous laryngitis as a complication of pulmonary tuberculosis is known to all who deal with the tuberculosis problem. Burger insists on the importance of local treatment of the throat, by surgical methods, if necessary. Without this, general sanatorium treatment not infrequently ameliorates the pulmonary condition, while the throat grows worse. The results of local treatment of the throat are really quite good and under these conditions there is a much better chance of the patient's ultimate recovery.

9. Lublinski does not regard "glandular fever" as a distinct disease entity; rather it is a septicopyemic condition secondary to various conditions, but very often accompanying an acute inflammation of the pharyngeal tonsil. The streptococcus is most frequently the causal organism, though other bacteria may be associated.

10. The sudden appearance and disappearance of certain forms of dyspnea early gave rise to the assumption of bronchial spasm as the cause. Especially has it been assumed that a spasmodic contraction of the bronchial muscle coat caused asthmatic attacks. The existence of smooth muscle in the bronchi is almost the only fact in support of this view. Some experimental work would seem to lend probability to the theory, but Grossmann, in a long, critical review of this, decides that experimental work does not accord with this theory, but rather favors disturbances in the pulmonary circulation as the cause.

[H. A. C.]

Berliner Klinische Wochenschrift. No. 24. June 17, 1907.

1. Borchardt, M. *Memoir of Ernst von Bergmann.*
2. Plehn, A. *Pernicious Anemia.* (To be continued.)
3. Bail, O. *Progress in Researches on Aggressins.*
4. Kisch, E. H. *The Constitutional Forms of Lipomatosis.*
5. Aronsohn, E. *On Heat Production in Fever.*

No. 25. June 24, 1907.

1. Kraus, F., and Nicolai, C. F. *The Electro-Cardiogram in Normal and Pathologic Conditions.* (Continued article.)
2. Veit, J. *The Abdominal Extirpation of the Carcinomatous Uterus.*
3. *Eichler, J. F. *Experimental Contributions to the Diagnosis of Pancreas Disease — Cummidge's "Pancreas Reaction" in the Urine.*
4. Hirschfeld, H. *Acute Myelogenous Leucemia.*
5. Leuftleben. *The Origin of Heat Stroke.* (Continued article.)
6. Plehn, A. *Pernicious Anæmia.* (Concluded.)
7. Hildebrandt. *The Surgical Treatment of Gastric Ulcer.*

3. Eichler says that the diagnosis of pancreas disease is always difficult and often impossible, and that it is not made in more than 50% of the cases. Despite the amount of work, which has lately been done on the resorption of proteids, carbohydrates and fats in diseased conditions of the pancreas, nothing of great moment in the diagnosis of these conditions has resulted. Sahli's "glutoid reaction" has been a step in advance, and a prompt reaction is now regarded as proof that the pancreas is not diseased; but a delayed reaction cannot be taken as proof of disease. Schmidt's new test, depending on the fact that the pancreatic juice dissolves the nuclei of meat — is also useful only in a negative way. The best-known change in the urine in diseases of the pancreas is the appearance of sugar; still this is not constant and in many cases absent. Often albumin, rarely fat, and extremely rarely maltose are found in the urine. A few years ago Cummidge described a new and complicated method of urine examination in cases of suspected pancreas disease and claimed that his method was of great diagnostic importance. The author carried out this procedure on the urines of three dogs, in each of which pancreatic lesions had been induced, and found Cummidge's test positive in all three. Several theories have been advanced as to the reason of this reaction in the urine, none of which seem satisfactory. The whole subject needs more careful attention and needs to be worked out more thoroughly. The important fact remains, however, that a positive reaction with Cummidge's test seems to point directly towards a pathological condition in the pancreas.

[R. D.]

Deutsche Medizinische Wochenschrift. No. 27. July 4, 1907.

1. *Jurasz, A. *Treatment of Tuberculosis of the Larynx.*
2. *Lesser, E. *Treatment of Syphilis in the Light of the New Discoveries.*
3. Westphal, A. *Pupil Phenomena in a Case of Katatonic Stupor with Remarks on the Pupil Reflex in Hysteria.*
4. *Grawitz, E. *Cure of Addison's Disease and its Pathogenesis.*
5. Schlesinger, H. *Pemphigus Eruptions in Affections of the Central Nervous System.*
6. *Einhorn, M. *A New Blood Test.*
7. Schossberger, A. *Leukemic Blood Changes in Congenital Syphilis and Sepsis.*
8. Bosse, B. *Lumbar Anaesthesia in its Modern Form.* (Concluded.)

1. Jurasz states that, while tuberculosis of the larynx is a very obstinate and resistant affection, it can be cured by energetic local and general measures. The treatment of the pulmonary condition must, of course, go hand in hand with that of the larynx. Vocal rest is of the first importance, the so-called "silence cure." Cough should be controlled by narcotics. Local treatment varies, from painting with astringents in mild cases to curetting or cauterizing and applying lactic acid in full strength. These procedures should be repeated again and again. Great patience and perseverance are required, and local measures are indispensable. No such case should be sent to a sanatorium unless proper throat treatment can be given. Palliative surgical measures are often a great relief. Tracheotomy often causes much improvement through rest to the larynx. Direct sunlight, reflected for hours at a time into the larynx by means of mirrors, is more beneficial than the Röntgen rays. Passive congestion produced by constricting the neck by rubber bands does much good, by relieving both pain and cough.

2. Lesser discusses syphilis in the light of the discoveries of the past year, claiming that great advances have been made in its rational treatment. The ability to detect the spirocheta pallida makes it possible to excise the primary lesion before the appearance of the secondary eruption, and to start the treatment early. This early treatment consists of mercury inunctions supplemented by local injections of corrosive sublimate, 0.5 cc. of a 1% solution, directly into the chancre, with or without the application of a mercuric salve. As a rule, no further manifestations of syphilis develop, but if they are observed they follow much sooner than usual, within six to twelve weeks, and when they appear are much less pronounced and fewer than usual. It is too early to tell surely whether this prompt treatment cures completely or not, and efforts are being made everywhere to discover new remedies. The most important of these is the sodium anilin-arsenate (atoxyl). In Lesser's experience it has a powerful action on the infectious agent, but is toxic to a high degree, and symptoms of intolerance are observed after a variable number of injections. These symptoms include gastro-intestinal pain, nausea, vomiting, general malaise, fainting, chilliness and albuminuria. The drug has a cumulative action, so the effect can be kept up with reducing doses. Its action is especially striking in malignant and ulcerating forms. The ordinary secondary associated lesions seem to be less influenced, but can be cured if the drug be given long enough. Owing to its toxic properties it probably will never take the place of mercury, but will aid us greatly in combating certain forms of the disease, and in those cases which show a marked idiosyncrasy to mercuric preparations.

4. Grawitz reports a case of Addison's disease, which he has been following for three years, which shows typical bronzing of the skin and great muscular weakness.

Gastro-intestinal symptoms were pronounced and there was complete absence of HCl in the stomach. Under prolonged dietetic treatment and lavage, with the administration of HCl by mouth, the patient has gradually improved until now he is almost of normal weight, and the bronzing and pigment patches in the mouth have almost disappeared. Severe gastro-intestinal disorders are a very common accompaniment of Addison's disease and, as in certain types of pernicious anemia, they probably play an etiological rôle. The pigment formation in Vagabond's Disease is not due solely to the parasites, but to the bad condition of the nutrition as well. It is also certain that there can be quite extensive disease of the suprarenal glands without pigmentation of the skin. It is probable that in certain of these cases, toxins arising in the intestine exert a harmful influence on the "chromaffin" tissue of the body, thereby causing bronzing and cachexia. When these toxins are eliminated the chromaffin system is given a chance to regenerate and a cure of the disease may take place.

6. Einhorn has simplified the Adler blood test. He prepared an aloin paper and a benzidin paper. Aloin paper was made by saturating ordinary filter paper with a solution of aloin in 70% alcohol; the benzidin paper by moistening filter paper with a saturated solution of benzidin and glacial acetic acid and drying it. In preparing the paper as well as making the test, it is of importance to avoid contact with the fingers. It is best to use an ivory tipped forceps, or protect the hand by means of a towel. A piece of benzidin paper is immersed in the solution to be examined and a few drops of hydrogen peroxide are added. The paper is placed on a piece of white porcelain and is examined for the development of a blue color. In the presence of blood a green or blue color arises in a few seconds or a minute. Regarding the sensitiveness of the reaction, it is greater if we allow more time for its occurrence. In dilutions of 1 part blood to 500 parts water a distinct reaction occurs in from thirty to sixty seconds. In dilutions of 1 to 2,000 a trace of blue occurs one to two minutes later. To wait longer for the reaction does not seem advisable, as after thirteen minutes the benzidin paper with hydrogen peroxide alone will yield a blue color. For practical purposes it will be best to wait but one minute for the occurrence of the reaction. In examining for blood in stomach contents too great a sensitiveness is not important, but rather a certainty that the test will indicate only blood. The longer we wait for the reaction the more substances besides blood may cause it. Benzidin paper may be used for testing for blood in stomach contents, urine and feces.

[L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 26. JUNE 25, 1907.

1. *EHRHARDT, O. *Progressive Skin Phlegmon of Diphtheritic Origin.*
2. SCHUBERT, G. *Clinical Observations on the Action of Secacornin in Obstetrical Practice.*
3. KAUSCH, W. *Successful Employment of the Sauerbruch Chamber (Negative Pressure).*
4. OPPENHEIM, M. *Phosphaturia in Gonorrhea.*
5. *ROSENBERG, E. *Experiments on the Therapeutic Uses of Human Gastric Juice.*
6. HEILE. *Some New Methods of Artificially Hastening the Healing of Certain Pathologic Processes.*
7. KRETSCHMANN, F. *The After-Treatment of the Antrum in Chronic Sinusitis.*
8. MERKEL, H. *A Case of Angina at the End of Pregnancy, Followed by a Fatal Streptococcus Septicemia.*
9. SEUFFERHELD. *A Case of Pleuritis Interlobaris Serosa.*
10. V. CRIPPA, J. F. *A Case of Fatal Mercury Poisoning.*
11. MARKUS, H. *An Aseptic Catheterizator.*
12. ENGEL, H. *A Simple Method of Estimating Sugar in the Urine.*
13. MIRTL, C. *Treatment of Frostbite by Artificial Hyperemia.*
14. MORITZ, F. *Remarks on the Physician's Point of View.*

1. Ehrhardt reports four cases of progressive skin phlegmon due to diphtheria bacillus. The condition occurred in weak, badly nourished children, having a poor resistance. The point of entry of the bacillus was always a small excoriation and the infection showed none of the characteristics of wound diphtheria. It descends to the deeper layers of the cutis and subcutis and spreads out into the surrounding tissue by means of the lymph channels. In some cases the patient had a coexistent diphtheritic process in the throat, in others none was demonstrable. The infection sets in with symptoms of a sharp febrile attack; locally, an infiltration of the subcutaneous tissue is seen, which rapidly spreads, the skin soon becoming loosed from the subcutaneous fascia, is bright red, injected, soft and edematous. Palpation reveals a hard infiltration in the deeper structures. Frank abscesses never occur. The pus is always thin and watery. On incision the skin is seen to be raised from the subcutaneous tissues, with pocket formation between the fascia and subcutis. This undermining of the skin goes forward rapidly, but has no tendency to burrow deeper. Widespread gangrene of the skin soon develops. The diagnosis is made by isolating the diphtheria bacillus from the pus, either by cover glass preparation or culture. The general appearance at first is that of a severe erysipelas. The prognosis is bad. Recovery is slow and healing results in extensive scar formation. The treatment should be antidiphtheritic combined with wide incisions and draining.

5. During the last ten years the gastric juice of pig and dog have been tried in the treatment of certain diseases of the stomach, for these animal gastric secretions are known to contain a very high percentage of free HCl. Rosenberg points out that the same result may be obtained by using the gastric juice of patients suffering from continuous or intermittent gastric hypersecretion. The gastric juice of such patients contains as a rule a much higher percentage of acid than normal, and in certain cases had an acidity equal to that of the dog. In a series of eight cases of hypoacidity from different causes, the author used the filtered gastric secretion from a patient with Reichmann's disease, in whom no trace of syphilis or tuberculosis could be found. This gastric juice had an average HCl content of 90, a high proteolytic power, and a pepsin content of 3.8. One teaspoonful of this was given four times a day, before food, during a period of six weeks. Weekly examinations of stomach contents showed no change in motility or digestive power, and no increase in the amount of free HCl. The filtrates showed no increase in intensity of the Biuret reaction. A few of the patients regained their appetites, a few gained weight, a few found their gastric distress bettered. The author points out that even with this gastric juice having so high an acid content, not enough can be given to really affect the acidification of proteids in the stomach and concludes that human gastric juice, as well as animal, is no more than a good stomachic, and in no way more valuable therapeutically than the old HCl treatment.

[R. D.]

ARCHIV FÜR KLINISCHE CHIRURGIE. BD. 82, HEFT 1.

1. *ROVSING, T. *The Curability of Tuberculosis of the Bladder.*
2. *BUSCH, M. *A Study of the Antitoxin Treatment of Tetanus.*
3. *RÖPKE. *Myositis Ossificans Traumatica.*
4. *WOLF, L. P. *The Results of Treatment with Thiosinamin.*
5. *PINCUS, W. *The Surgery of the Naso-Pharynx.*
6. LILIENFELD. *The Classical Fracture of the Radius.*
7. KOTZENBERG. *Two Cases of False-joint from Fracture of the Neck of the Femur in Youth.*
8. HARTMANN, O. *Complete Absence of the Neck and Head of the Femur in a Case of Congenital Dislocation of the Hip.*
9. BORNHAUPT, L. *Acute Pancreatitis.*
10. *WEDENSKY, A. *The Rôle of the Accessory Apparatus in Cases of Injury to the Extensors of the Knee Joint.*
11. BAYER, C. *Slipping of the Tendon of the Gluteus Maximus Accompanied by a Murmur.*
12. TILMANN. *The Explanation of Muscle Wounds of Bullets.*
13. MÜLLER, E. *Decapsulation of the Kidney.*
14. HASHIMOTO AND TOKUOKA. *The Treatment of Bullet Wounds of Nerves by Freeing and Dislocation of the Nerve between Muscle Layers.*

1. Rovsing, in a very interesting paper, reports his experience in fifty-six cases of tubercular infection of the bladder. Fifty-six and four-tenths per cent of the cases of renal tuberculosis he finds complicated by a like infection of the bladder. Thus the infection is usually primary in one or both kidneys, exceptionally primary in the genital tract and very rarely primary in the bladder itself. It is hopeless to attempt to heal a tubercular bladder in the presence of the primary focus. The condition of the kidneys must be carefully studied by means of ureteral catheterization and bacteriological examination of the urine. If on catheterization turbid urine is collected from each side it does not necessarily follow that both kidneys are tubercular, for cases of the author have shown that tuberculosis from the bladder can ascend a healthy ureter. In such cases, as also in those cases where catheterization cannot be accomplished because of ulcerations, strictures, etc., an explorative incision in each lumbar region, with ureterostomy will give evidence for correct future treatment. After excision of the kidney primarily affected, it is not rare to see a beginning bladder tuberculosis heal spontaneously. If this does not occur, Rovsing injects a 6% solution of carbolic acid. The pain of such an injection may be combated by previous instillation of a 2% cocaine solution. This treatment, persisted in for from one to six months, has resulted in cure in thirteen of the author's cases.

2. Only 3 cases out of a total of 4,313 treated in Körte's clinic at Berlin developed tetanus during the years from 1890 to 1905. Busch, therefore, concludes that prophylactic injections of anti-tetanic serum are not advisable in that community, for the ordinary sort of wounds. He advises its employment, however, in cases of gangrene from frostbites, wounds by firearms, or when the wound has become contaminated by street dirt or garden soil.

3. Röpke reports two cases of bone formation in the abdominal muscles, the one five months, the other a year, after laparotomy. Neither wound was drained. After reviewing cases from the literature, and calling attention to the experiments of Liek, which demonstrated bone formation in the rabbit's kidney following ligation of its vessels, Röpke advances the following explanation for the occurrence of bone in muscle after trauma: such deposits are usually found near the muscular insertion and occur in cases where the trauma has been so severe that there ensues marked necrosis. The damaged tissue, in such close proximity to bone, quickly absorbs lime, whereby the new connective tissue becomes ossified.

4. Wolf calls attention to the absolute uselessness of injections of thiosinamin when used in an attempt to remove scar tissue in internal organs. Its use is not without danger, for if there be any latent focus of an inflammatory nature anywhere in the body, this is very apt to be made worse. He feels that the drug may be of value in the treatment of keloid or Dupuytren's contracture, if combined with massage, passive motion, etc. [Observations of its action on three cases of keloid made by Dr. M. Boehm and Dr. Quinby at the Massachusetts General Hospital in the winter of 1905 proved the uselessness of the drug, even in superficial scars.]

5. Pincus reports eighteen cases of tumors occurring in the naso-pharynx at v. Bergmann's clinic. The various operative procedures adopted are given in detail.

10. Wedensky calls attention to the part played by the external and internal vastus and the tensor of the fascia lata in aiding extension at the knee-joint. Their action becomes of especial importance when the patella has become broken or its ligament ruptured. [W. C. Q.]

Miscellany.

A CANCER EXHIBITION.

In connection with the general meeting of the International Surgical Society in Brussels, in September, 1908, at which a discussion on cancer will take place, it is proposed to arrange a cancer exhibition, and a circular has been issued inviting contributions, not only from members of the society, but also from others. All objects connected with cancerous disease will be received, but the following classes are enumerated: (1) Macroscopic or microscopic specimens, either instructive from a surgical standpoint or of special interest on account of their localization or method of dissemination; (2) topographical anatomical specimens or drawings illustrating individual operations for cancer; (3) topographical anatomical preparations of the lymphatic vessels and glands of particular regions; (4) statistical wall charts illustrating the duration of the treatment of cancerous diseases; (5) statistical wall charts illustrating the frequency of primary cancer and its metastases in particular organs, based upon clinical or pathological experience; (6) statistical charts dealing with the spread of cancer in different countries, exact plans of so-called cancer foci, and family trees of families in which cancer has existed for several generations; plans of cancer institutions and hospitals, their reports of work done, and financial statements; (8) reports of movements to encourage the early treatment of cancerous diseases, appeals to the public, and proposals as to the means by which a knowledge of the importance of the early diagnosis of cancer may be brought home to the public without exciting panic. Communications should be addressed to Prof. A. Depage, 75 Avenue Louise, Brussels, who will take charge of the specimens, arrange them for exhibition, and return them at the close of the meeting. Exhibitors will have an opportunity of demonstrating their specimens to members during the meeting. — *British Medical Journal.*

Correspondence.

HEMORRHAGIC INFARCT OF THE INTESTNE.

BOSTON, Sept. 10, 1907.

Mr. Editor: Kindly permit me to call your attention to an editorial which appeared in the JOURNAL of Aug. 29, entitled "Hemorrhagic Infarct of the Intestine." From statements there made one is led to conclusions in regard to the condition which I am sure are erroneous. The subject is a much larger and more complicated one than the writer seems to recognize. For instance, he makes no account of infarcts due to arterial embolism, but speaks only of those due to venous thrombosis. He does not mention that, though diarrhea is the rule, about a fifth of the cases show obstipation. One is led to expect the presence of a palpable tumor, when in reality this is quite rare. The diagnosis is *not* easy; on the contrary, all writers admit it to be exceedingly difficult. At operation, end-to-end suture should *never* be employed; the second method mentioned by the writer, that of sewing the cut ends of the gut into the wound, being the only safe procedure. Up to 1904 there had been 5 complete cures by operation, so undoubtedly at the present date the number is still larger. Finally, though the condition is rare, it certainly cannot be said to be "most infrequent." These remarks are based on an analysis of 214 cases made in 1904 which appeared under the title of "Mesenteric Embolism and Thrombosis," Jackson, Porter, Quinby, in the *Journal of the American Medical Association* for that year.

Very truly yours,

WM. C. QUINBY.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 31, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1472	685	Quincy	11	6
Chicago	—	—	Waltham	5	3
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	10	4
Baltimore	214	89	Brookline	4	1
Cleveland	—	—	North Adams	11	5
Buffalo	—	—	Chicopee	8	5
Pittsburg	—	—	Northampton	7	0
Cincinnati	—	—	Medford	4	2
Milwaukee	—	—	Beverly	3	1
Washington	—	—	Leominster	7	1
Providence	65	21	Hyde Park	3	2
Boston	231	106	Melrose	3	1
Worcester	57	31	Newburyport	—	—
Fall River	58	43	Woburn	7	7
Cambridge	27	14	Marlboro	6	2
Lowell	39	18	Westfield	6	2
Lynn	25	8	Peabody	—	—
New Bedford	46	23	Revere	8	2
Springfield	17	7	Attleboro	6	4
Lawrence	32	19	Clinton	—	—
Somerville	15	7	Adams	9	8
Holyoke	23	13	Gardner	5	3
Brockton	15	1	Milford	—	—
Malden	10	6	Watertown	1	1
Chelsea	14	9	Plymouth	—	—
Salem	9	6	Weymouth	7	4
Newton	6	3	Framingham	2	—
Haverhill	12	5	Southbridge	10	5
Fitchburg	—	—	Wakefield	—	—
Everett	9	3	Webster	—	—
Taunton	24	7			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING SEPT. 7, 1907.

E. J. GROW, surgeon. Detached from duty at the Naval Hospital, Washington, D. C., and ordered to the Bureau of Medicine and Surgery, Navy Department.

W. G. FARWELL, medical director, retired. Detached from duty at the Navy Recruiting Station, Philadelphia, Penn., and ordered home.

H. BUTTS, assistant surgeon. Detached from the "Maryland" and ordered to the Naval Station, Cavite, P. I.

T. H. STREETS, medical director. Ordered to additional duty as a member of the Naval Retiring Board, Washington, D. C.

W. A. MCCLURG, medical director. Detached from the Marine Barracks, Washington, D. C., and ordered to duty as president of the Naval Examining and Medical Examining Boards, Washington, D. C.

C. D. LANGHORNE, surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the Marine Barracks, Washington, D. C.

C. J. DECKER, surgeon. Having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service from Aug. 31, 1907, under the provisions of Section 1453, Revised Statutes.

C. G. ALDERMAN, assistant surgeon. Detached from the Naval Hospital, Puget Sound, Wash., Sept. 15, and ordered to the Naval Medical School, Washington, D. C., Oct. 1, for instruction.

F. X. KOLTES, assistant surgeon. Detached from the Naval Hospital, Mare Island, Cal., Sept. 15, and ordered to the Naval Medical School, Washington, D. C., Oct. 1, for instruction.

EXAMINATION.

ANATOMIST (MALE). ARMY MEDICAL MUSEUM.—The United States Civil Service Commission announces an examination on Oct. 23, 24, 1907, to secure eligibles from which to make certification to fill a vacancy in the position of anatomist (male), at $1,600 per annum, in the Army Medical Museum, office of the surgeon-general, and other similar vacancies as they may occur there.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners for application Form 1312. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

RECENT DEATHS.

DR. GAYLORD PARSONS CLARK, dean of the faculty of the College of Medicine, Syracuse University, died suddenly from cardiac disease at his home in Syracuse, N. Y., on Sept. 1. He was fifty years of age, and was graduated from the medical school in which he held office, in 1880.

DR. LANSING B. WINNE, a well-known physician of Albany, N. Y., who is stated to have been suffering from mental trouble for some time past, committed suicide on Sept. 2. His body was found several hours after death in the chapel adjoining Holy Innocents Episcopal Church, of which Dr. Winne was a vestryman. There was a bullet wound over the right temple, and a revolver was in his hand.

BOOKS AND PAMPHLETS RECEIVED.

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The Venereal Peril in Its Relation to the State. By Ferd. C. Valentine, M.D. Reprint.

The Emergency Dilatation of Urethral Stricture. By Ferd. C. Valentine, M.D., and Terry M. Townsend, M.D. Reprint.

500 Surgical Suggestions. Practical Brevities in Diagnosis and Treatment. By Walter M. Brickner, B.S., M.D., and Eli Moschcowitz, A.B., M.D. Second Series. New York: Surgery Publishing Co. 1907.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D. Fourth edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

A Practical Treatise on Fractures and Dislocations. By Lewis A. Stimson, B.A., M.D., LL.D. (Yale.). Fifth edition, revised and enlarged. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1907.

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Report of Cases of Brain Abscess. By F. E. Kittredge, M.D. Reprint.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. XII. Washington. 1907.

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Original Articles.

A SUPPURATING SUPERNUMERARY URETER OPENING INTO THE PROSTATIC URETHRA.

BY ARTHUR L. CHUTE, M.D., BOSTON.

THE following case illustrates a rare anomaly of the ureter, of which I have been able to find few similar instances.

The patient, a man of forty-two, was first seen at the Boston Dispensary in the fall of 1905 in the service of my colleague, Dr. C. M. Whitney. His history was that of a urethral discharge that was followed by an epididymitis eleven years before. Since this urethritis he had had a great deal of backache, as well as suprapubic pain and pain in his groins and perineum. He noted in 1900 that his urine was turbid and thinks that it may have been even before this time. Since 1900 he had had to get up three or four times at night, but micturition had been practically painless. He had had bladder irrigations for some two years and also had been treated for vesiculitis and prostatitis, but without effect.

Examination showed a very turbid urine containing pus, small round cells and bacteria in abundance. Neither kidney was palpable nor tender. His prostate, vesicles and testes were normal. Cystoscopy showed a bladder that was unusually tolerant, allowing easily a distention of from 12 to 16 oz. There was a slight cystitis of the lower part of the bladder and a puckering high up on the posterior wall that I supposed was due to a former ulceration. The right ureter was normal and emitted very frequent jets of what appeared to be clear urine. The left ureter was "slipper" shaped with the bladder moderately distended, while with a fully distended bladder it gaped widely and a little turbid fluid could be seen issuing from it at irregular intervals. A catheter passed into the left ureter gave very little urine, but when passed to the kidney pelvis it evacuated 2 oz. of turbid fluid in a short time. This fluid contained a trace of albumin, 0.50% urea, blood, pus, round cells and bacteria. Neither slide preparations nor a guinea pig inoculation showed tubercle bacilli. A specimen from the right kidney showed a very actively secreting organ. The urine was transparent; it contained a very slight trace of albumin, and 2.27% of urea. The sediment which was very slight showed a single cast, some epithelial cells and a little normal blood, the last probably due to slight injury by the catheter.

Several examinations gave practically this same result. Washing out his left kidney pelvis would lessen for a time the turbidity of his urine and his frequency of micturition but gave only temporary relief. He was advised that drainage of his left kidney, or possibly its removal, was the only thing that would permanently benefit him. He was unwilling to undergo operation and ceased to attend the clinic.[1]

After an absence of eight months, this man reappeared in August, 1906, with the story that up to a few weeks before he had been as when last seen. For a few weeks he had been having frequent and painful micturition, he had lost appetite and weight and had had occasional chills. His urine was turbid, of an orange color and with a peculiarly offensive odor. On standing in a cylindrical glass it deposited a sediment that was nearly one half the height of the column of urine. This sediment showed pus, epithelium, a little blood, and immense numbers of a staphylococcus of some sort. The kidneys could not be felt; there was no tenderness in either loin. There was pain to the left of the bladder and just behind it and there was tenderness at these points, as well as over the lower part of the left ureter. His bladder washed clean very easily but was less tolerant than formerly. The ureters were as at the previous examination, but the lower part of the bladder showed a greater degree of cystitis. Behind and to the outside of the left ureter there was a localized patch of cystitis as there was also on the posterior wall rather nearer the left than the right side. At these points the mucous membrane was very dark red and thrown into folds, which in some places were surmounted and in others bordered by reddish vesicles.

Catheter specimens were taken from the lower part of both ureters. That from the right now contained a good many casts, some with blood and epithelial cells adherent. Stained specimens of the sediment, however, gave no bacteria, showing that the condition was toxic rather than infectious. The urine from the left ureter was very small in amount and was as at the previous examination.

When after the cystoscopy this patient came to empty his bladder it was noticed that the fluid was followed by several drops of pure pus, and that by straining with his bladder empty he could express pus in little jets. Pressure behind and to the left of the bladder increased the amount of pus he could express. His prostate was neither tender nor enlarged. It was found that he was running an evening temperature of from 101° to 103°.

On several occasions a large catheter was placed in his bladder and during the time it was in position the bladder urine contained much less pus. After leaving the catheter in place for a few hours his pain would increase and his temperature go up. On removing the catheter an unusual amount of pus would be discharged with relief to his pain. This and the area of edema bullosum led me to believe that he had a collection of pus behind and to the left of his bladder that connected with the prostatic urethra either through the prostate or a seminal duct. The fact that with the catheter in place the bladder urine was much less turbid, made it seem probable that the left kidney was not, at least, the immediate cause of his acute symptoms.

A perineal section that I did early in September, 1906, showed a point on the left lateral wall of the prostatic urethra, about half an inch in front of the bladder sphincter, from which pus was oozing and from which more could be forced by pressure above the bladder. This opening was dilated, a tube inserted, and a catheter fixed in the bladder. Drainage from the tube was free and his temperature came down, but not to normal. As the perineal wound closed the temperature went up again and there was a tenderness over the whole course of the left ureter and left kidney, though no distinct mass could be felt.

At a second operation, some weeks after the first, a left-sided extra-peritoneal incision was made in order to explore the lower portion of the ureter and the region behind and to the left of the bladder. A normal looking ureter was found in its usual position; this was followed to the bladder and showed no abnormality. The region to the left of the bladder showed nothing more than brittle, friable fat, that had evidently suffered inflammatory attacks. Behind the bladder, to the inside of the normal ureter, and very closely bound to it by adhesions at the point where the normal ureter joined the bladder, there was a thick walled tube which

[1] The history of the case to this point has been reported as an illustration of the fact that a renal suppuration does not necessarily give symptoms distinctly referable to the kidney; that it may in fact point more to bladder involvement. Also as an illustration of the fact that palpation may not reveal a tender or enlarged kidney in some suppurations of the renal pelvis. "Some Cases Illustrating Cystoscopic Diagnosis." BOST. MED. AND SURG. JOUR., 1906, vol. 154, p. 309, Case IV.

was nearly the size and appearance of a bit of small intestine that was without a peritoneal coat. This tube extended to the right along the back of the bladder a short distance, then becoming much convoluted it rose out of the pelvis and extended upward parallel to the normal ureter and to the inside of it. It was found to lose itself above in a big flabby sac, evidently a dilated kidney pelvis. After freeing this tube it was tapped and found to contain very foul pus. The patient's condition was too poor to allow of a nephrectomy or kidney resection, so the abnormal ureter was cut close behind the bladder and a large drainage tube sewed into its stump. After removing a section of the tortuous ureter, and passing a tube through it into the dilated kidney pelvis, its upper end was brought out at



the superior angle of the incision and fixed to the skin. Nothing was done with the normal ureter. The muscles and skin were sutured between the two tubes.

There was for several days after operation a moderate sepsis due to soiling of the denuded surfaces during operation. The wound did not, however, break down at any point, and after a few days the temperature reached normal. The dilated kidney pelvis did not drain satisfactorily and had to be irrigated. At first it would hold 4 oz. of fluid without giving discomfort, later it contracted a little. There was at no time any discharge from this ureter that in the least resembled urine. Before the tube that had been sewed into the lower end of the abnormal ureter was removed it was found that fluid syringed into it escaped into the urethra.

When convalescent, this patient's bladder was again examined and it was found that the two areas of localized cystitis with edema bullosum had entirely cleared up. The ureters were catheterized simultaneously — the right discharged rhythmically an abundance of normal looking urine, while the left gave at first a continuous drop-by-drop stream of suspiciously pale fluid that later came rhythmically. As I suspected from the color of the fluid that the left ureter was dilated and was allowing fluid from the bladder to flow up the ureter, and that the rhythmical discharge was really due to bladder contractions, I injected methylene blue into the bladder through a third catheter. The blue made its appearance in the left catheter at once.

The left kidney was removed through a lumbar incision four weeks after the second operation. It was adherent everywhere and had an artery entering both the upper and the lower pole. The ureter that emptied into the bladder arose from the lower pole and was cut a few inches below the kidney. The pyo-ureter was dissected out with a small margin where it had adhered to the skin. The wound was closed in layers with drainage. The patient's convalescence was interrupted on the fifth day by an attack that seemed like a thrombosis somewhere in his left loin. It was attended with great pain, rapid pulse and respiration and diminished excretion of urine; other than this temporary upset his convalescence was normal and he left the hospital about the middle of December with all his wounds solidly healed and passing a nearly transparent urine, the first portion of which contained a few shreds presumably from the stump of the abnormal ureter.

The kidney prepared for me by Dr. Leary, showed on section two pelves that did not communicate with each other. The upper pelvis, the one drained by the pyo-ureter, was much larger than the one that connected with the bladder. It would hold about 4 oz. of fluid. There was no vestige of secreting tissue but there were several depressions, evidently the remains of calices. There was an apron or septum that partly occluded the opening of the pelvis into the ureter, while the ureter just below the pelvis showed an "S" shaped curve that was not unlike a plumber's trap. The walls of the ureter were much thickened. The appearance of the cavity was not that of a congenital cyst but more that of a kidney whose secreting tissue had been completely destroyed by suppuration. That portion of the kidney that emptied into the bladder was limited to the lower pole and was much the smaller of the two. There was at one point a little crescent of what looked like secreting tissue but with this exception there was no suggestion of renal substance. There were several depressions in the lesser pelvis that were probably the remains of dilated calices. Though at my first examination I had gotten 2 oz. of residual urine from this pelvis, it had contracted so that it would hold only about 1 oz. There were two renal arteries that entered, one near either pole.

The examination left no question but that we had to do with a congenitally malformed kidney having two pelves and ureters. The appearance of the larger cavity indicated that most of the secreting tissue had opened into it. The ureter from this section of the kindey, through a fault of development, opened into the prostatic urethra instead of into the bladder. Its lower end was apparently surrounded by prostatic tissue.

Whether the infection was an ascending one, due in the first instance to a gonorrheal urethritis, as seems most probable, or whether it was descending, due to a hematogenous infection of a badly drained kidney

pelvis, is something concerning which one can only speculate. Everything pointed to the probability that the infection had been present for a very considerable time and that the onset of the more acute symptoms early in the summer did not by any means mark the beginning of the process. The true nature of the condition was not recognized until the time of the second operation.

This case presents in reality two abnormalities: that of a double ureter, and that of an abnormal opening of the lower end of a ureter. Though these two deformities were combined in this instance, and are in a large proportion of such cases, they are not necessarily so; there are numerous instances of double ureters entering the bladder in a practically normal manner as well as instances where the lower end of a single ureter has opened abnormally. Of 9 cases of ureters opening into the prostatic urethra collected by Schwarz, duplication was present in 7, while in 2 the ureter was a single one.

Unilateral duplication of the ureter is a fairly common anomaly, the frequency of which has been variously estimated by different writers; thus Lessing places it at from 1% to 4%; Zondek at 3% to 4%, and Robinson at about 4%. The duplication is due to the fact that the Wolffian duct gives off at an early stage of intra-uterine life two ureteral buds instead of one, both of which develop into a ureter usually connected with its own separate renal pelvis. When double ureters enter the bladder approximately normally as they may often do, they give rise to no symptoms. This was the case in a patient whom I recently cystoscoped for another condition and on whose right side I found two ureteric openings, from which swirls of urine could be plainly seen. With rare exceptions duplication of the ureter is of clinical interest only when one or both ureters show an opening that is abnormal, either as to its caliber or its location.

An abnormal opening of the lower end of the ureter is rarer than mere duplication and of more surgical interest. Certain types, such for instance as where a ureter opens into the vagina, occur not very infrequently and invariably give rise to very annoying symptoms demanding surgical treatment. Other types, such as that seen in the reported case, are much rarer and demand surgical treatment less frequently.

The various types of abnormal ending of the ureter depend upon developmental errors. In some this error is relatively slight, as for instance when a ureter enters the bladder by an abnormally small orifice, or when it ends in a cystic dilatation just under the mucous membrane of the bladder. These are instances where there has been a relatively slight arrest in development, a failure either to perforate the bladder membrane or to make a sufficiently large opening. Cases of this type, though they represent a relatively slight developmental error may give rise to serious trouble as is evident from a perusal of the cases of this sort collected in the papers of Grosglik and Cohn.

The more marked abnormalities of the lower end of the ureter, particularly those that are attended with a considerable change in its location, are brought about in the very complicated shifting that takes place at the time that the Wolffian duct and the developing ureter cease to enter the allantois by a common opening. At this time the Wolffian duct, and the non-developed Müllerian duct in the male, separate from the urinary tract and go to form the seminal tract. During this change the Wolffian duct closes its original opening into the allantois, while the ureter prolongs downward its original lateral opening into the Wolffian duct, until it opens into the bladder. Certain abnormalities, such as the opening of a ureter into a seminal vesicle or any part of the seminal tract are due to a failure on the part of the developing ureter to separate from the Wolffian duct, while that organ, after closing its opening into the fetal bladder goes on with its normal plan of development. Other changes are apparently



due to a displacement of the lower end of the developing ureter, that seems best explained by a pulling or crowding of the ureter of the embryo by the Wolffian duct, which is very active at this time and changes its position very materially. A relatively small displacement of the ureter at this early stage of intra-uterine life may result in a considerable deviation from the normal at full term. A slight displacement forward suffices to bring the fetal ureter into contact with the tissues that are to form the deep urethra, and this probably accounts for anomalies of the type seen in the reported case. The instances where a ureter opens into the urethra in women are probably brought about in the same way. In the cases where a ureter courses through the prostate it is probable that the ureter does not pierce, so to speak, the developing prostate, but that the prostate which is an outgrowth from the deep urethra develops about the already abnormally placed ureter. It is improbable that abnormal ureters that open

into the prostatic urethra *at the veru montanum* take their origin from an abnormal connection between the ureter and a Müllerian duct.

While the lesser abnormalities of the lower end of the ureter, such, for instance, as an abnormally small opening into the bladder, or a cystic ending under its mucous membrane, are due to slight arrests in development, the more marked changes in the location of the ureteric orifice must, in the male at least, be attributed to the disturbing influences which the Wolffian duct, under certain unknown conditions, exerts upon its off-shoot, the developing ureter. In the female we have to take into account beside the distortions due to the Wolffian duct, which would account for ureters opening into the urethra, the influence of the Müllerian duct. An abnormal communication between this organ and the ureter probably accounts for ureters that open into the vagina. The explanation of the exact mechanism by which some of these changes take place is at present quite impossible since the whole subject is too imperfectly understood.

A study of the recorded cases of the particular type of the one reported brings out several points of interest, both as regards double ureters and ureters opening into the prostatic urethra. In instances where there are two ureteral openings there will almost invariably be two non-communicating pelves, each with its own area of secreting tissue and often with its separate afferent blood supply as well. The ureter with the lower and more external opening will almost, without exception, lead from the upper pelvis. This has been called Weigert's rule and may be of use in planning a kidney resection should it be indicated.

When a ureter opens into the prostatic urethra there is no incontinence of urine. So long as the ureter remains uninfected there will usually be no symptoms. The rarity with which ureters opening into the prostatic urethra have been noted is probably in part explained by the fact that such cases unless infected are symptomless and are therefore unrecognized. The history of the reported case, as well as some others, makes it evident that in cases when a ureter opens into the prostatic urethra, the urethra gets accustomed to the presence of urine and allows it to pour back into the bladder without causing the reflex desire to empty the bladder that is supposed to take its origin from the entrance of a few drops of urine into the prostatic urethra. Meslay has suggested that a ureter opening into the prostatic urethra will be particularly liable to become infected at the time of puberty, due to the fact that the enlargement of the prostate that takes place at that time will have a tendency to press upon the ureter and interfere with its emptying itself.

As symptoms arise only in cases where there is infection, and as infection of a badly drained ureter speedily gives rise to a renal involvement, the signs will in general be those of a kidney infection. If on cystoscopic examination no ureteric orifice was found on the side giving evidence of kidney involvement this would be suggestive. This could occur only in cases where there was no duplication of the ureter. A sign that would be more suggestive of a renal suppuration of this origin is the ability to force out little jets of pus or turbid urine, immediately after the bladder has been completely emptied by a catheter. This in itself would not distinguish the condition from any other collection of pus opening into the deep urethra, but with other collections of pus a mass or induration would be found, which is not the case in this condition. Though in the reported case the ureter passed through the substance of the prostate, repeated rectal examinations failed to show any mass or tenderness. In most cases a definite diagnosis will not be made before the kidney or course of the ureters has been exposed.

Since attention will rarely be called to this condition until infection has taken place, the treatment of these cases in which a ureter opens in the prostatic urethra, will be nephrectomy in perhaps most instances, whether the kidney has one ureter or two. In some cases presenting a duplication of the ureter, resection of the diseased part of the kidney and the diseased ureter may be possible, as was done in a case reported by Albarran. One can conceive of cases in which the disease process had not extended so far, but that it might be possible to transplant the lower end of the ureter into the bladder and by draining the kidney preserve some secreting tissue. This would be particularly desirable to try in cases in which an only ureter opened into the prostatic urethra, or where the kidney of the other side was somewhat damaged.

A review of the literature of this subject warrants one in considering this condition a rare one. If one takes into account the cases in which a ureter has opened into the urethra in women, which are probably due to an analogous developmental error, the number of reported cases would be considerably increased. Schwarz in his article written in 1896 brought the general subject of abnormal endings of the lower end of the ureter down to that time. He collected from the literature but nine instances in which a ureter had opened into the prostatic urethra. All of his cases were autopsy reports. While I have in all probability overlooked some instances I have found recorded since the date of Schwarz's article but 4 additional cases. Of these 4, but 1 case, that of Albarran, was operated upon.

A synopsis of these cases follows.

Meslay. — A man who died of a cerebral lesion presented bilateral duplication of the ureter. The supernumerary ureter on the left opened into the prostatic urethra; that on the right ended in the prostate itself. Though it was known that this man's urine had been turbid for some months before death, his parents were unaware that he had complained of any urinary trouble.

Obici. — The autopsy of a man of fifty-five who died of pneumonia showed two ureters on his right, both of which traversed the muscular wall of the bladder just under the mucous membrane and opened "some millimeters from the neck." The context implies that the ureters opened into the

prostatic urethra since it was stated that there was no incontinence. No other symptoms were given.

Nicolich. — In 1904 Nicolich demonstrated before the French Urological Association a specimen taken at autopsy from a man of forty, who died of pneumonia. There was no account of his urinary symptoms. On the right there was what Nicolich took to be a persistent Müllerian duct. Below it opened by a small orifice into the prostatic urethra; above it ended in a "sac superimposed on the superior pole of the kidney."

After examining the specimen Albarran expressed the opinion that it was really a double kidney, one ureter of which opened into the prostatic urethra.

Albarran.— Before the same meeting and as analogous to the above case reported by Nicolich, Albarran described the case of a young man of twenty-six, who came to him with a fistula that had followed a nephrotomy done for a pyonephrosis. At the operation to close the fistula, Albarran found what he termed "two kidneys separated only by a furrow." The upper one he resected with a considerable length of its ureter. He assumed that this ureter opened into the prostatic urethra, though he was unable to demonstrate this fact. He had, however, been able to demonstrate by cystoscopy that the ureter did not open into the bladder. It may be assuming too much to include this case with the others.

The condition is undoubtedly a rare one, but probably not so rare as one would be led to suppose from the literature. It should be considered as a possibility when one is dealing with atypical urinary suppurations.

I am indebted to Mr. Walter Manton for the cuts that accompany this article.

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RECENT ADVANCES IN THE KNOWLEDGE OF TUBERCULOSIS IN EARLY LIFE.*

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THE literature produced in the last few years on the subject of tuberculosis in early life is so enormous and the number of new observations, experiments, facts and theories contained therein so great, that it is exceedingly difficult to summarize the recent advances in the knowledge of this disease. Moreover, the views brought forward are so divergent, yet are all supported by such masses of carefully obtained and compiled evidence, that it is still more difficult to choose among them, or to form any satisfactory conclusions. The subject is still under discussion, and is now more than ever full of open questions, to which the final answers must still be awaited.

In this paper I shall endeavor to summarize some of the results of all this work. I shall present as facts those points which are admittedly established, and shall give my personal opinion on the preponderance of the evidence in the points under discussion, in which an exhaustive study of the literature has enabled me to form an opinion. The remaining points will be presented as theories, or as open questions.

INCIDENCE OF TUBERCULOSIS IN EARLY LIFE.

Important conclusions, based on an immense number of autopsies, have been drawn as to the frequency of tuberculosis in early life. It has for some time been known that this disease is exceedingly common in childhood, more so than has been generally supposed. But the most striking fact brought out in the autopsy statistics is that the frequency of occurrence of tuberculosis increases regularly with the age. It is rare in the first three months of life, and increases steadily throughout childhood, not only from year to year, but also, in the first two years, from month to month. According to the statistics of various observers, it is as follows:

First three months,	0– 2%
Second three months,	16–17%
Second six months,	22–26%
1–2 years,	42–44%
2–10 years,	67%
10–15 years,	64–77%

This fact is of great significance in connection with the question of source and mode of infection, to be discussed later.

The same statistics show that tuberculosis as the cause of death in those cases in which it was found at autopsy decreased with advancing age. Hamburger and Slicka, whose figures are based on 2,557 autopsies on children under fifteen years, found that in all these cases in which tuberculosis was found in children under six months, it was the direct cause of death, but that in children, in the second six months, it was the direct cause in 75%. Over two years, it is much more infrequently the direct cause of death.

They also found absolutely no evidence of any tendency toward healing in the first two years of life.

It should be mentioned here that Salge concludes from careful researches that autopsy findings are not an absolute indication of the prevalence of tuberculosis in early life, but represent only a minimum, as virulent bacilli may be present without producing demonstrable lesions.

* Read in the Section of Tuberculosis in Children, of the National Association for the Study and Prevention of Tuberculosis, at the Third Annual Meeting, Washington, D. C., May, 1907.

NATURE OF THE TUBERCULAR PROCESS IN EARLY LIFE.

Recent studies also have emphasized the great difference in the pathology of tuberculosis in early life from that of adult life. Tuberculosis in infancy and childhood is essentially a disease of the lymph nodes. Tubercular adenitis represents the chronic tuberculosis of childhood, as phthisis represents the chronic tuberculosis of the adult. The autopsy statistics quoted above showed tubercular involvement of the bronchial lymph nodes in 98%; the mesenteric lymph nodes in 36%; the cervical lymph nodes in 30%.

Leaving aside for the present the questions of the source of the tubercular infection, and its point of entrance into the body, we know that in children the bacilli do not usually cause demonstrable primary lesions of the skin or mucous membranes, but localize themselves in the lymph nodes. Here they set up a chronic process, which authorities agree to be a reaction of defence, directed toward the prevention of a further extension of the virus. In proportion to the completeness of this protective reaction, the bacilli are either prevented from multiplying, and thus may remain indefinitely latent, or they multiply, though prevented from spreading. In the former case, there are no clinical manifestations; in the latter, there are faulty nutrition, loss of weight, and occasionally fever.

There is at times a further extension of chronic tuberculosis. This occurs when virulent bacilli, escaping into the circulation, localize themselves in such a tissue that the tissue reaction again succeeds in limiting their further spread. This is, in fact, a true metastasis. Examples are, the tuberculosis of the bones, and the solitary tubercles sometimes found in the brain or liver.

This metastasis of chronic tuberculosis is, however, not the usual method in which further spreading takes place. The usual method is the acute tuberculosis of early life. When the resistance of the human organism is lowered by some cause, such as an intercurrent infection, notable among which are measles, and pertussis, or some indeterminable cause, the bacilli invade the general circulation and produce an acute general or localized miliary tuberculosis. It was formerly supposed that miliary tuberculosis occurred only when a large number of bacilli suddenly escaped into the blood stream. The weight of modern opinion does not believe this, but rather that a few, possibly only one, escape, the main point being that a vascular lesion is formed, from which as a nidus further extension occurs. Thus, for example, in tubercular meningitis one bacillus may cause a tubercle in the lymph spaces of the pia, from which as a source the infection spreads along the course of the vessels, through the vascular channels throughout the tissue. General miliary tuberculosis is due to a tubercular vascular thrombus, which forms a similar nidus.

Although tubercular meningitis and acute miliary tuberculosis are the commonest acute manifestations of tuberculosis in early life, and are responsible for the greater part of the mortality, other acute or subacute forms occur, such as tubercular bronchopneumonia and tubercular peritonitis. In the latter, the infection reaches the peritoneum through the lymphatics, and a tubercle is formed which forms the nidus from which the general involvement of the membrane takes place. Whether in tubercular bronchopneumonia the invasion occurs through the pulmonary lymphatics, or from a fresh aërogenous infection, is one of the questions which still remain unsettled.

SOURCES OF INFECTION.

For a long time after Koch's discovery it was believed that tubercle bacilli, like the pyogenic cocci, were generally distributed, were everywhere, in the air, in the dust of the streets, in houses and in food. Under such circumstances every one was constantly exposed to tuberculosis, and infection occurred when resistance was sufficiently lowered to give the omnipresent germs a start. This view has been proved to be untrue. It is now generally recognized that the only source of tubercular infection is the tuberculous man or animal.

Four theories have been held as to the source of the infection. First, the congenital theory, advanced by Baumgarten, that tuberculosis is always intra-uterine in origin, due to placental infection. While there is evidence that tubercular infection can, in very rare cases, occur in this way, there is absolutely no evidence that it plays any important part. Second, that infection takes place from the inhalation of dried tubercular sputum. Cornet, who advanced this view, supported it by many ingenious inhalation experiments on animals, from which he concluded that it represented the only source of infection. The experiments are highly artificial, and the weight of modern opinion does not accept in full Cornet's conclusions, though admitting that the dust from dried sputum is in fact a source of infection of great importance, and that Cornet has conferred great benefit on the progress of study by calling attention to its dangers. The third view is that supported by Flügge, that the source of infection is the fine moist drops expelled in coughing. This also is a possible, but by no means exclusive, method of acquiring the disease. Its chief benefit was in calling attention to the danger of the tuberculous individual. The fourth view is that the source of tubercular infection is the milk of tuberculous animals. The most extreme supporter of this view is, or was, Behring, who asserted that tuberculosis is always primarily a disease of infancy, and that at whatever age and in whatever form it manifested itself clinically, it was always due to a milk infection occurring in infancy. The phthisis of adults, he said, is only the concluding chord of the infant's cradle-song. This view naturally was of intense interest to pediatrists, and aroused a controversy which has ever since been raging in the scientific journals. In its support are the results of much painstaking

study on human and bovine tubercle bacilli. We know now that the bovine type can produce tuberculosis in man. Behring based his view chiefly on the fact that his animal experiments showed that it was practically impossible to infect young animals in any way except by the food, and on the frequency of latent tuberculosis in childhood.

Against it there is much to be said. One cannot reason too closely from young animals to young babies. Also, Behring's view implies the absolute identity of human and bovine bacilli, which, though a common species, we now know to be two distinct types or races, which can be mutually recognized. The bovine type is not most commonly found at autopsy. Also, studies on tuberculosis in cattle have shown that even there infection takes place most commonly by inhalation. Finally, in Japan, where there are no cattle, and where milk is never used as an infant food, tuberculosis is just as common, in just the same forms, as in milk-drinking countries.

The whole history of tuberculosis in early life is against the idea of any one exclusive source of infection. That infected food is an important source, possibly of special significance in early life, cannot be denied. Nevertheless, autopsy statistics show that the more an infant comes in contact with his surroundings the greater the liability to tuberculosis. This fact points us to the chief factor in tubercular infection, the surroundings of the infant. While in the cradle in his earliest months, he is comparatively protected, but as he gets older, is more carried about and handled, or when he creeps on the floor, coming in contact with soiled handkerchiefs and all sorts of other objects, putting everything he finds into his mouth, or inhaling contaminated dust, then the opportunities for infection multiply. This view of house infection, of infection from surroundings, as the chief source, is now generally held by the best authorities. Even Behring has recently modified his views to include it, and there is experimental evidence in its favor, as young guinea pigs, placed in tubercular families, contract the disease.

THE PORTALS OF ENTRY FOR TUBERCULAR INFECTION.

The main difference of opinion still remains, not so much as to the source of the infection, but as to its portal of entry into the body in early life. So high an authority as Schlossmann believes that Behring's theory of tuberculosis being always acquired through the intestine in infancy is the most important step in the progress of knowledge of this disease since Koch's discovery of the bacillus. Many other authorities believe to-day that tuberculosis is practically always acquired through the intestine.

The supporters of this view now admit the importance of house contagion, in which the child carries the bacillus to its mouth. They even admit that tubercle bacilli can enter with the air stream, in which case they believe the organisms become entangled in the secretions of the nose or pharynx, and are swallowed. In any case they reach the intestine, where the lymphatic apparatus is specially adapted to their penetration. The fact that the bronchial lymph nodes are more frequently involved than the mesenteric, is explained on the ground that the latter form insufficient filters against the penetrating power of the bacilli, which consequently enter the general circulation *via* the thoracic duct, and localize themselves in the points of least resistance, which are the bronchial lymph nodes.

This view is supported mainly by the results of experiements on animals which have lymph node tuberculosis resembling that of infancy, in which the lesions of the bronchial lymph nodes are due to ingestion of the virus, it being very difficult to produce tuberculosis by inhalation. Another argument is based on the infrequency with which the lungs and larynx are affected in infancy, and that the first lesion is always vascular. Moreover, a violent reaction of the lung is caused in infancy when by inhalation even the smallest foreign bodies enter the smaller bronchioles and alveoli, but no reaction of the lymph nodes. Also, all other infections entering by inhalation involve the bronchi or alveoli, not the lymph nodes, and hence tuberculosis is obviously hematogenous or lymphogenous.

The chief argument against this view is that it is unwise to draw such important and far-reaching conclusions as to children from laboratory experiments on animals. If it is true that the tubercle bacillus can pass through the mucosa of the intestine without producing a lesion, the same is true of the mucosa of the lung, and if the lungs and larynx are infrequently affected, the same is true of the intestine. Inhalation does not imply the entrance of a number of bacilli, and hence no violent reaction is necessary. All analogy points to the lymph nodes lying nearest to the point of entrance as the ones primarily affected, which means that the more frequent point of entry is in the lungs. The behavior of dust particles is a strong argument in favor of the aërogenous origin of lymph node tuberculosis. And Theobald Smith has shown that even in cattle tuberculosis enters more often through the lung than through the intestine.

It is probable that in infancy the commonest portals of entry are the lungs, the tonsils and nasopharynx and the intestine. Corresponding with these three portals of entry, we find primary involvement of the bronchial, cervical, and mesenteric lymph nodes.

SOME THEORETICAL CONSIDERATIONS.

I must call attention to some theoretical views recently advanced by Dr. Theobald Smith. Taking up the subject of the parasitism of the tubercle bacillus from the point of view of the parasite, he points out that a stable parasitism results from a selective adaptation, the result of the interaction of two organisms. It is necessary for the continued existence of such a parasitism that the parasite shall provide itself with a mode of exit from as well as entry into the host. From

this necessity follows a lowered virulence, or invasive power, the bacillus attacks the skin or mucous membrane, and phthisis is the commonest form. Other forms, as lymph node tuberculosis, are aberrant, as the parasite must die without exit. Such forms are commoner in childhood, because the bacillus, being keyed, as it were, to adult life, is more invasive in childhood.

As a result of the study of the peculiarities of tubercle bacilli in cultures, and of the reactions to tuberculins and vaccines, Smith has formulated an interesting theory. The tissue reaction in tuberculosis is a mechanism of mutual defence on the part of the host and parasite, and is stimulated by something given off by living bacilli only. He believes the bacilli are provided with a protecting envelope, with neutral chemotaxis, which must first be removed by the body fluids, the blood, which can be compared to an opsonin, although Smith does not agree with Wright that phagocytosis and the leucocytes play much part in the defence against tuberculosis. The envelope being removed, the bacilli multiply, and stimulate cell proliferation, which checks multiplication. Some bacilli are destroyed, while the rest, protected by caseation, remain latent, provide themselves with a new protecting envelope, and, if discharged, are ready to infect again. Thus when bacilli are latent, it is because the opsonic or capsule-removing power of the blood is too low, and the body, while apparently immune, is really in a state of hypersusceptibility. When the capsule-dissolving or opsonic power rises, multiplication begins.

Without entering upon any discussion of the very technical evidence upon which this theory is based, I will say that I think it is specially attractive in connection with the peculiarities of tuberculosis in early life, namely, the great frequency of latent tuberculosis, and the frequency, extreme severity, and fatality of the acute manifestations. The child's blood is low in capsule-removing power, hence tuberculosis is latent, but the child is nevertheless hypersusceptible, hence the little resistance and slight tendency toward healing.

THE DIAGNOSIS OF TUBERCULOSIS IN EARLY LIFE.

As to the diagnosis of tuberculosis in early life, much work has been done with a view to determining the exact diagnostic value of the tuberculin reaction. It is admittedly certain in animals, but has frequently failed in adults. The conditions are believed to be more favorable in children, where the reaction is considered a very valuable diagnostic sign. Schick, basing his conclusions on exhaustive experimental work, believes that a local reaction is less apt to fail than the general constitutional reaction. He concludes that no known case where tuberculosis has been excluded with certainty has given a local reaction, and that this reaction is often the only positive sign.

As to serum diagnosis, much work has been done, but final conclusions as to its value cannot yet be drawn. Many observers believe the agglutination test to be an absolute and very early sign, while others deny its value, and have found agglutinating power in the serum of apparently healthy persons.

On the difficult subject of the clinical diagnosis of chronic tuberculosis in early life, there has been much painstaking observation, and a few new points have been brought out. D'Espine believes he has found a reliable method of diagnosticating enlargement of the bronchial lymph nodes by auscultating the voice. In a normal child the tracheal tone stops abruptly at the seventh cervical spine, but with a pathologic process in the lymph nodes it extends further downward. In the first stage auscultation on the child's crying or pronouncing the resonant words "*trois cents trois*," reveals a whispering tone superadded to the voice, which in a more advanced stage becomes bronchophony. Dullness on percussion of the seventh cervical or first dorsal spines is a later sign, as are intrascapular dullness and the bronchial souffle. Gibson has called attention to venous dilatation over the chest, neck or shoulder, tending to converge above the sternum, as a valuable sign. The most important diagnostic method, however, which we now have at our disposal, is due to the recent perfection of radioscopic diagnosis.

There has been much discussion recently as to the possibility of recovery from tubercular meningitis. In the literature of the last twelve years, I found only three cases of recovery where the diagnosis was satisfactorily established.

THE PROBLEM OF IMMUNITY.

Ever since Koch's discovery of the tubercle bacillus, for those who have busied themselves with the study of tuberculosis from the scientific standpoint, the central problem has been the conferring of artificial immunity. The problem, like most problems in immunity, is so complicated, that, as far as human beings are concerned, but little of positive and practical value has been accomplished. Nevertheless, an enormous amount of work has been done, with the result of at least clearing the ground and preparing the way for what will follow in the future.

Three methods of producing immunity have been tried. First, mithridatisation, producing active immunity by the frequent introduction of increasing doses of poison. Second, jennerisation, producing active immunity by infecting with weakened cultures. Third, serum therapy, producing passive immunity by introducing an immune serum. The third method has given no favorable results at all. The first was the method chosen by Koch, with the old tuberculin. Though useful in animals, it has failed in human beings, and it has been shown that it confers immunity only against poison, not against living bacilli. The attention of the scientific world is now focused upon the second method,—the conferring of immunity by means of vaccines.

There are many preparations of tubercle bacilli now in use as vaccines, and their value as immunizing agents is not yet settled. The question is

still in its infancy, yet some progress has been made. It has at least been determined that the immunizing power of a vaccine is distinct from its toxic action; and the most modern investigators are working with vaccine and doses which cause no general constitutional reaction.

The ingenious theory of the opsonin brought out by Wright has been applied to tuberculosis. I assume you are familiar with the general theory. As you know, he takes the opsonic index as a guiding factor in giving the tubercular vaccine. It is extremely ingenious. The chief objection is that there is no evidence that phagocytosis is at all an important factor in the protecting mechanism against tuberculosis. Granting then that the opsonic index rises after an injection of tubercular vaccine, and that a permanently raised opsonic power may be produced in the blood by repeated injections made at the proper time, nevertheless, there would be no reason to expect an increased power of resistance against the organism.

Nevertheless, other substances, true antibodies, may increase in parallel with the opsonin, which are of protective use, so that one cannot yet condemn this method. Such antibodies may be the substances which dissolve the protective envelope, as suggested by Smith.

Smith believes that the hypersusceptibility produced by an attack of tuberculosis is in reality a partial immunity, that immunity, being dependent on the tissue reaction, is of necessity focal, and though some general immunity is produced, it is not sufficient to prevent a second, a severer attack. This, though insufficient, carries with it the germ of the possibility of immunization to such a degree as to wholly prevent a second attack. The chief stumbling-block to producing immunity in tuberculosis is that the immunizing substance is toxic, and immunity requires exposure of the whole body to a toxic immunizing substance. Nevertheless, the human being is undoubtedly in a fairly good state of natural resistance toward tuberculosis, and there is much hope that a method will be devised by which by the creation of local foci under the control of the observer, general immunity may be attained.

THE REPORT OF AN UNUSUAL CASE OF ULCER OF THE STOMACH.*

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The diagnosis of ulcer of the stomach is not always a simple matter. If the important symptoms of this disease are present, such as pain appearing soon after meals accompanied by nausea and vomiting, together with hematemesis and a localized painful area in the epigastrium, there is no difficulty in establishing the diagnosis; but frequently one or more of these symptoms are absent, and great difficulty may be experienced in arriving at a correct diagnosis. Leube recognized this difficulty when he advised his rest treatment in all doubtful cases of gastric ulcer in order to verify by the result of the treatment the correctness of the diagnosis; unfortunately, even this method cannot always be relied upon.

The difficulty which is sometimes met with in arriving at a correct diagnosis of ulcer is occasionally experienced, even after an abdominal incision has been made, *i. e.*, even under direct inspection of the ulcer. The case which we are about to report presents conditions of this kind.

The patient, W. H. K., age thirty-eight years, married, first presented herself for treatment on Oct. 22, 1906. Her family history was negative; her mother died of tuberculosis of the throat; with this exception her family history was good. The patient had had the diseases of childhood, including scarlet fever and diphtheria. She has complained much of shortness of breath, and during the past five or six years she has been troubled with gastric disturbances. She has had much nausea and vomiting, beginning some hours after eating. The vomited matter is very acid and contains some food remains, but never blood; accompanying the nausea and vomiting there is pain in the left hypochondrium, back, and also in the lower abdomen; this pain is sometimes intense; it comes on in paroxysmal attacks lasting from one half to two hours, and is mainly experienced between 2 A.M. and 5 A.M. Eructations are almost constantly present and at times of acid. The patient believes that she is quite sallow following these gastric attacks, though she has never been jaundiced. The stools are sometimes light colored; the bowels are regular, the urine is high-colored and causes a burning pain on micturition and there is increased frequency in voiding. The patient has severe menstrual pain with decreased flow and pain in the lower abdomen, with a soreness on both sides extending around the back and down the legs, which is increased on walking or riding. She has become very nervous recently and complains frequently of sick headaches; she has lost considerable flesh and the appetite has been diminished. On examination the patient was found to be a fairly healthy looking woman with a fair amount of flesh; the tongue is clean, the mucous membrane of a rather good color; the skin is sallow and covered with some acne pustules, especially on the back. The chest wall is well formed, the movements are good; the heart and lungs are normal.

Inspection. — The abdomen is full; there is considerable subcutaneous fat; the left side of the abdomen is a little fuller than the right.

Palpation. — The abdomen is tender everywhere; there is considerable muscular resistance in the left hypochrondrium; this area is exquisitely tender to pressure; the tenderness extends along the left costal margin, running from the axillary line 8 cm. toward the median line; no mass can be detected. There is also considerable tenderness in the lower abdomen, which is about equal on both sides. The liver is not palpable; the upper border extends to the fifth intercostal space; the right kidney is freely movable (2°); the left kidney slightly palpable; there are no glandular enlargements.

Percussion. — On auscultatory percussion the stomach is found in normal position and not dilated, the lower curvature reaching one finger's breath above the

* Read at the Annual Meeting of the American Gastro-Enterological Association, Atlantic City, June 4, 1907.

umbilicus. On inflation of the stomach a similar result was obtained.

Gastric contents. — One hour after an Ewald test breakfast 40 cc. of gastric contents were obtained of a cloudy appearance, but well digested, containing no remains of a heavy meal taken the evening before. The total acidity is 40; free HCl, 0.141%; pepsin and rennet normal. A second examination revealed similar results. The patient was placed on a liquid diet, the gastric disturbance was lessened, while the lower abdominal pains became so intense that the patient consulted Dr. W. W. Russell for relief of this condition. On examination, Dr. Russell could not detect any pelvic disorder, but finding a "suspicious" condition, ordered the patient to the Union Protestant Infirmary for examination under ether. The patient entered the hospital on Nov. 27, 1906. The following day she was placed under ether anesthesia, and inasmuch as the pelvic condition still remained obscure, an abdominal incision was made for exploratory purposes. The pelvic organs were found normal; the appendix and the gall bladder were also normal.

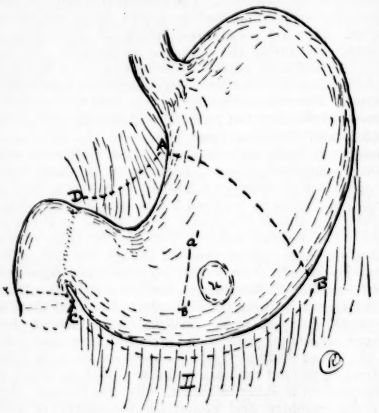


FIG. 1. D, A, B, C, Y, X, line of excision. A′ B′ exploratory incision. U, ulcer.

The stomach presented a mass on its anterior surface 1 cm. from the greater curvature and about one third of the distance between the pylorus and cardiac extremity. The mass was about 3.5 cm. in diameter, convex externally and concave on its inner surface. There were a number of hard shot-like glands above the lesser curvature of the stomach and below the greater curvature. A longitudinal incision 4.5 cm. in length was made along the pyloric side of the mass, the mass everted and then inspected. This was found to be an ulcerating mass with a firm fibrous indurated base, concave, and sharply circumscribed with elevated edges. Inasmuch as the base of the mass was indurated and thickened, and inasmuch as there were present a number of enlarged glands in the fat of both the lesser and greater curvatures, the question of malignancy could not then be definitely determined. It was therefore decided to perform a radical operation and remove the entire mass with its neighboring tissue.

Accordingly, after freeing the duodenum and stomach and carefully packing off the peritoneal cavity, clamps were placed and the stomach incised between them along the line AB, BC, DA (Fig. 1), care being taken to remove as many glands as possible with the mass without, however, interfering with the bile ducts; the duodenum was then cut between the clamps along the line *xy;* the excised portion of the stomach was removed; the upper end of the duodenum was then closed, which was followed by the closing of the open end of the stomach, after the second method of Billroth. A posterior gastro-enterostomy was then made. The duration of the operation was two hours and twenty minutes. The patient recovered slowly from the ether and awakened with considerable nausea; she vomited a small amount of bloody matter; salt solution enemata were administered every four hours. On the following day the temperature of the patient was 99°, pulse 76 and strong, and she was found in splendid condition; the nausea gradually disappeared, and on Dec. 1 the patient was very comfortable, had no nausea and was able to take small quantities of water by the mouth, and on Dec. 4 as much as half an ounce of any liquid. The patient gradually gained her strength, and her subsequent history was uneventful until Dec. 10, when a rise of temperature (100°) began to reveal itself with pain and muscle spasm in the left inguinal region; on the following day the pain extended down the inner side of the left thigh and was followed by a numbness in the leg. A phlebitis of only moderate severity manifested itself, which detained the patient in bed until Dec. 30, 1906, on which day she was able to be up in a chair. Coincidently with the phlebitis there was a dry pleuritic friction rub present in the right lower chest at about the center of the axillary line; this subsided within three days. The patient was able to walk and to leave the hospital on Jan. 12, 1907; her left leg was still somewhat swollen; her appetite and digestion were good. On April 10, 1907, a Ewald test breakfast was given; 44 cc. of contents were removed at the end of one hour, with a total acidity of 49, free hydrochloric acid 0.10%. The patient complains but little of any digestive disturbance and can eat a fairly good meal without discomfort, although she realizes that she cannot take a large quantity of food at one time. The specimen removed was carefully studied by Dr. J. C. Bloodgood, to whom we beg leave to acknowledge our thanks, both for his careful study of the specimen as well as for this report. The following is his report:

"*Pathology, gross.* — Excavated ulcer with elevated edges; glands enlarged with areas suspicious of metastases.

"*Microscopic.* — Ulcer, vascular, cellular granulation tissue; glands chronic lymphadenitis.

"*Gross pathology.* — The piece of stomach removed measures 11 cm. in length. It has been divided at the junction of the pylorus with the duodenum, and removed with a considerable mesentery of fat on its greater and lesser curvature. There is a palpable tumor 1.5 cm. from the greater curvature, 2.5 cm. from the lesser and about 3 cm. of healthy stomach on the cardiac side and 6 cm. on the pyloric side. There has been an exploratory cut in the anterior wall of the stomach to the pyloric side of the tumor. The peritoneum over the palpable mass looks perhaps less vascular than the peritoneum in other parts. It is distinctly fixed, however, over an area of about 1 cm., while the palpable mass is about 2 cm. If one places the finger within the stomach it passes over an elevated ridge, then into a superficial excavated area; with the index finger of the right hand in this cavity and the finger of the left hand on the peritoneum, one can feel between the fingers a narrow zone of dense tissue, thicker and firmer than the adjacent stomach, well, but distinctly more elastic and not as hard as cancer. When the two palpating fingers approach the borders

of this mass, it has a smooth, round edge and is distinctly circumscribed.

"When the stomach is turned inside out, the mucous membrane everywhere looks normal except in the region of the palpable tumor. We have here an elevated area, the borders of which are covered with mucous membrane. This area measures roughly 3.5 cm. At the top of the elevation the mucous membrane dips down in crescent folds and ends abruptly. The surface of this excavated area is smooth; it does not look like mucous membrane; it is pale, with some red areas. It has the surface appearance of a simple ulcer, and not that of a carcinomatous ulcer. It has the anemic appearance of a very chronic ulcer. When a section is made for a block, we find an appearance similar to the simple ulcer described by Bloodgood.[1] There is, first, on the surface a narrow zone of tissue less than a millimeter in thickness, which looks like a red line; then there is a zone of white, firm, translucent tissue 5 mm. in thickness; no epithelial alveoli can be seen in this. Then there is a zone 2 mm. in thickness with white fibrous tissue mixed with red muscle tissue.

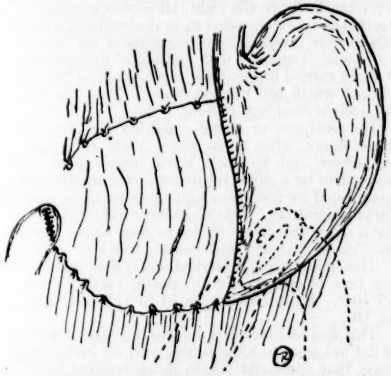


Fig. 2. Appearance of stomach after gastrectomy. E, position of gastro-enterostomy.

Then comes the peritoneum; here and there a streak of fibr ous tissue reaches the peritoneum."

"The tumor corresponds very closely to the case mentioned above and described by Bloodgood. In this case the ulcer is not as round, and there is less elevation of the mucous membrane around the ulcer, but the surface of the ulcer and the appearance of the tissue beneath correspond exactly to those in Bloodgood's case."

"When I first cut into the tumor, it was so firm that I hurriedly dictated cancer. It was slightly gritty, but not as much as is usually felt in cancer; the surface of the ulcer was too smooth, and in the rather edematous fibrous tissue there were no granular epithelial alveoli. The gross diagnosis of inflammatory tissue is confirmed by the frozen section. Between bands of fibrous tissue staining with eosin there are large areas of young connective tissue, quite edematous; at first sight one might say syphilitic ulcer, but the lymphoid-type cell does not predominate."

"One block was taken through the entire thickness of the ulcer for frozen, aceton and Zenker sections. One gland from the greater curvature and one from the lesser curvature. The gland in the greater has a white area exactly like metastatic carcinoma, but the white area cannot be expressed, as is usually seen in cancer. If I had cut into this gland at the operation, I would have made a diagnosis of metastatic carcinoma, yet from the finding so far we must look upon it as inflammatory. A large gland in the lesser curvature has a smaller white area, more of the appearance of a chronic inflammatory gland."

[1] Johns Hopkins Hospital Bulletin, vol. xv, November, 1904.

"This case illustrates the difficulty, at least with our present knowledge and experience, of making a correct differential diagnosis in doubtful cases at the operation. Even in the laboratory it required considerable time and careful inspection to come to the conclusion that the indurated area was an ulcer and not a schirrus carcinoma in an ulcer. When cutting into the gland in the laboratory it resembled a metastatic gland so closely that, were it not for the ulcer and the frozen section which are before me, I might look upon the gland as carcinoma. For this reason all doubtful indurated tumors which are operable should be treated as cancer when situated in the stomach, and I am of the opinion that in this case the functional result of the gastrectomy will be better than a regional resection of the indurated tumor. In the case just mentioned as reported by Bloodgood, a clinical diagnosis of ulcer was made. At the operation, on account of the indurated tumor and its infiltration of the fat in the lesser curvature, a diagnosis of cancer was made; in the laboratory a gross diagnosis of ulcer, which was later confirmed by the microscope."

This case is interesting from the fact that, notwithstanding the existence of a markedly



Fig. 3. Ulcer of stomach.

indurated ulcer in the stomach, the symptoms which were present were by no means distinctive of this condition, and that even upon direct inspection the simple ulcer could not be differentiated from a carcinoma. It is also evident, as Bloodgood points out, that all doubtful indurated ulcerations situated in the stomach should be treated as carcinomata, inasmuch as it is impossible in many of these cases to differentiate ulcer from carcinoma by simple inspection, and again because in a certain number of these cases a carcinoma is apt to develop upon the indurated border of an old ulcer.

Clinical Department.

TWO CASES OF BRAIN ABSCESS.*

BY F. E. KITTREDGE, M.D., NASHUA, N. H.

CASE I. John J. Nine years of age. A full-blooded Micmac Indian.

Entered hospital Aug. 24, 1906. Gave a history of long continued suppuration of right ear and frequent attacks of pain. At date of entrance to hospital there was marked edema and tenderness back of and just above the ear. I did a simple mastoid operation, finding the bone rather dense for a child and but very few cells. The mastoid antrum contained pus and necrotic tissue. In curetting the antrum, broke through the roof and exposed an epidural abscess, evacuating about a teaspoonful of pus. The dura was covered with granulations. Enlarged my opening on all sides until I came to what appeared to be healthy membrane, carrying it forward, somewhat over the ear.

The little fellow's symptoms all subsided, temperature became nearly normal and apparently made a good recovery. He left the hospital in about three weeks' time.

Sept. 22, I was called to his house and found him having at intervals very severe frontal headaches, accompanied by violent attacks of vomiting, slightly subnormal temperature and a pulse of about 60.

After watching him a day or two, I diagnosed brain abscess and urged his folks to return him to hospital for operation. At that time they refused, but a few days later, finding that his condition was growing worse, consented and I moved him there and operated Sept. 27. Temperature at the time of operation was 96.4 and pulse 58 to 60. There was no tenderness upon pressure anywhere on that side of the head.

I reopened my original incision and found the dura, which had been originally covered with unhealthy granulations, in a healthy condition, but somewhat bulging. I laid open the membrane, and went in about one inch with a needle but secured nothing. Then got a longer needle and going in fully one and a half inches or more, drew out a few drops of pus.

I then cut the brain tissue from below up, and evacuated over 1 oz. of pus. Carrying my finger in as far as I could reach, I found a well walled off cavity. Noticing a little pus posterior to my opening, probed and found another pocket. Upon opening this, I should think a half ounce of fluid was found and evacuated. The first pocket went directly in toward the center of the head and slightly upward. The second went almost directly backward, just above the ridge of the sinus. I drained both cavities with gauze, changing it once in twenty-four hours.

At the time of operation enough bone was removed so that I had an opening about two inches in diameter. After a few days he had a pronounced hernia and it was extremely difficult to keep it well drained. This gradually broke down and required considerable curettement. I hardly dare to say how much necrotic tissue was cut and curetted away, but finally secured a large and fairly clean cavity directly up to what appeared to be the wall of the ventricle, and extending backward, about as far as I could carry my forefinger. There was no loss of motion or function and the little fellow was very bright mentally.

He seemed to be doing well until about Oct. 15, when he developed meningeal symptoms which gradually grew worse. Just previous to this, when everything was apparently doing well, he was seen by Dr. Philip Hammond, of Boston, and we thought there was every prospect of a rapid recovery. The meningeal symptoms continued to grow worse, the head was drawn back, bowels markedly retracted, obstinate constipation, difficult urination and marked pain upon any movement of the body.

These symptoms continued for several days, and finding that my cavity had markedly decreased in size with bulging of its walls, I made a thorough examination with finger. The finger seemed to break into the wall of the lateral ventricle and, upon its withdrawal, was followed by a gush of water mixed with considerable pus. I then carried packing very deep, in same direction from which the water came.

Soon after this his meningeal symptoms seemed to subside, and general condition grew better. After some trouble, a movement of bowels was secured, and he was able to pass urine without difficulty.

Upon Oct. 25, when he seemed fully as well, he was suddenly taken with convulsive movements and these were immediately followed by absolute loss of power over limbs of left side of body. The face was apparently paralyzed upon that side, the mouth being drawn back very markedly to the right, there was grinding of the teeth, the eyes were rolled up in the head and wide open. There were involuntary movements of the bowels and urination, together with absolute unconsciousness. I again carried finger in and opened one of the original sinuses which had become closed. This was followed by a slight discharge of fluid.

He remained in above condition for about forty-eight hours, when there was a slight return of consciousness and he took some nourishment. There seemed to be a slight return of power in arm and leg, manifested by resistance upon moving them, a spastic form of paralysis. This slight improvement lasted only for a short time however, for he soon lapsed into absolute unconsciousness and died the following day.

This patient had a marked septic temperature from the time of operation until death, varying from 99° to 104°. Pulse varied from 70 to 125, averaging 100 to 110.

This was an extremely interesting case to watch, as it did not seem possible to me, with my limited experience, that one could lose so much cerebral tissue and have no motor or mental disturbance. I will not undertake to say how large a cavity there was, but when seen by Dr. Hammond, he estimated that about one third of the hemisphere had disappeared. I do not think that is at all overstated.

From an anatomical point of view, just what part of the different lobes of the brain were involved, I cannot say, except that the first large cavity lay in the tempero-sphenoidal region, a little above the floor, and extended well upward and inward. The smaller cavity extended directly backward toward the occipital region. Later, my small posterior cavity seemed to become obliterated, and I had one large cavity extending directly inward, its upper wall was high up toward the top of the head, and its posterior part, somewhat in the shape of a funnel, extending far back and toward the center.

Previous to the operation Dr. C. H. Nutter attempted an examination of the patient's eyes, but the boy was considerably frightened, and he could not do so satisfactorily.

CASE II. Luther S. Thirty years of age.

Entered the hospital Oct. 9, 1906. Temperature 101°, which quickly advanced to 104°. Had all symptoms of acute mastoiditis, including tenderness over mastoid region and just above left ear.

History of having had trouble with that ear since a boy, with slight discharge at times, also marked pain through that side of head at intervals.

* Read before the New England Otological and Laryngological Society, Nov. 16, 1906.

Had appearance of being a very sick man, and it was thought best to delay interference and watch him for a time. The acute symptoms gradually subsided, temperature became lower and he felt considerably better, all but the tenderness upon pressure, over and back of ear, which remained about the same. His general condition being very much better, Oct. 11, I operated, doing a simple mastoid. The bone being very much sclerosed, found it a very difficult operation. About one-third of an inch under the surface, opened up a cell which was filled with very dirty looking and bad smelling pus. A very small sinus connected that cell with the antrum, which also was filled with pus of the same character, and necrotic tissue. Everything was cleaned out as thoroughly as possible.

Patient rallied well, temperature became normal and remained so. He had every appearance of making a rapid recovery. There was just one symptom that caused me any uneasiness, and that was, now and then, pain at top and side of head, but after four or five days, that seemed to subside and he was allowed to sit up and move about. Upon the morning of Oct. 17, he felt so much better he was considering when he should leave the hospital.

Early that afternoon, one of the nurses noticed that he did not answer readily when spoken to, and very shortly after, had a severe convulsion following the cry which usually precedes that of epilepsy. The head was drawn back, mouth turned to right and eyes rolled up in head. The breathing was heavy and hard. One convulsion followed another for the next two or three hours, and were only controlled by frequent inhalations of chloroform. Patient was very drowsy during the remainder of the day. Following convulsion he had three or four attacks of vomiting. Next morning felt better, temperature was 99° and a fraction, pulse about 60. Calomel was given to act upon bowels and after several free evacuations he brightened up and declared he felt about as well as before the attack.

That night, his temperature going to 103° and pulse beating very slowly, I decided upon immediate operation for brain abscess. I trephined about one inch above the zygomatic ridge, directly in line with the mastoid, and had immediate bulging of dura through the lower part of my opening. Needle was entered immediately under the dura, no pus found, then was carried about one-half inch into the brain tissue, where it entered a pocket of pus.

Bone was then cut away with rongeur forceps, down to the original mastoid opening, dura was opened up, and with a knife cut into the brain until the pocket was reached. I found the cavity filled with very foul pus, should think about half an ounce in all. Depth of cavity was possibly one and a half inches from outer surface of brain. I cut away the roof of the mastoid, also roof of the tympanum, securing good drainage. For the first two days I used, as drainage, iodoform gauze packed in strips. Following that used a cigarette drain with plain gauze.

The discharge was very dirty and bad smelling for ten or twelve days, and he seemed a little dull mentally for about the same period. His temperature ranged from 98.5° to 99.5°. Pulse was very slow, most of the time from 50 to 56, until Oct. 29, when it was only 40. The following day, upon removal of dressing, much more pus was found than usual. My forefinger was very carefully carried into the cavity and the tip entered another pocket at the extreme end of and anterior to the original one. His pulse, soon after, began to improve both in character and rapidity of beat, going into the 60's, at times even above 70. This patient left the hospital Nov. 8.

There was marked pulsation of the walls of the cavity as far in as I could see with a reflected light. An interesting thing to observe upon examination was, that if the patient hawked or coughed ever so slightly, it was immediately followed by a wave of the walls of the cavity, and a quick bulging, due, I suppose, to a rapid hyperemia in the brain.

Oct. 25, Dr. Nutter examined the patient's eyes and gave the following report:

Fundus of right eye normal.

Left eye, a slight neuro-retinitis, involving about one third of the outer border of the optic nerve.

No hemorrhage or change in blood vessels noted.

GENERAL LYMPHO-SARCOMA ACCENTUATED IN THE PHARYNX.*

BY F. P. EMERSON, M.D., BOSTON.

April 30, 1901. Mr. A. C. W. was sent to me with the following history: He was forty-seven years of age, an American, born in Boston, and a merchant by occupation. His father died at the age of seventy-five from cardiac disease. His mother died at the age of seventy-four from carcinoma. One brother died of phthisis; one sister died of scarlet fever. The patient gave a history of having had typhoid and, at the age of eight, an attack of rheumatic fever, which recurred annually six or eight times.

In 1898, an intestinal hemorrhage was followed by fainting. There was epigastric tenderness and a consulting physician diagnosed duodenal ulcer.

In 1899, a fainting attack was preceded by hematemesis, and following this hemorrhage there first developed difficulty with articulation which grew progressively worse and was accompanied by hoarseness. At this time, examination showed a spare man, poorly nourished, with marked pallor and swollen upper lids, having the general appearance of pernicious anemia. There were no scars on the skin or mucous membranes. Glands were found in the groin and neck, but the spleen and mesenteric glands were not palpable. There was marked cardiac hypertrophy with a systolic murmur at the base. The rhythm, however, was regular and the compensation good. There was slight dyspnea. The uvula was club shaped and the size of one's thumb. A new growth, which seemed to be an extension of the posterior palatine folds, was seen in the lateral walls of the pharynx, with a central mass between. This mass protruded forward at the lower third of the pharynx, was resistant to the finger and of a grayish color.

The larynx was not involved.

The nares were obstructed completely, apparently from collateral edema which gave a tense and water-logged appearance to the mucous membrane. This did not shrink under cocaine sufficiently to afford a view of the pharyngeal vault.

The upper lids were puffy, especially at the outer third, where they formed a curtain over the eyeball. Eversion of the lower lids showed them to be thickly studded with granular elevations. There were nodules in the cheeks and to each side of the frenum of the tongue. The bridge of the nose was broadened. There was no history of pain, headache or sensitiveness of the scalp.

The patient denied syphilis and alcohol.

His weight had dropped from 158 to 130 lb., and later it fell to 126½ lb.

He had had so-called bilious attacks frequently, and such attacks always preceded tarry stools.

His temperature was normal and the pulse 80. There was loss of appetite with fullness of the epigas-

* Read before the New England Otological and Laryngological Society, Nov. 16, 1906.

trium and muscular weakness. Pallor and depression were marked. His station and gait were normal. A provisional diagnosis was made of syphilis of the uvula, posterior pillars of the palate and pharynx, and he was put upon mixed treatment.

Oct. 22, 1901. The patient had gained 2½ lb. During an attack of rheumatism, lasting two weeks, his physician reported that the hoarseness with difficulty in swallowing, and swelling of the eyelids, improved decidedly, but returned with convalescence.

Nov. 7, 1901. — His weight had increased to 132½ lb.

Nov. 15, 133½ lb.

Nov. 26, 134 lb.

Dec. 15. There was a slight hemorrhage from the stomach and bowels. At 12:45 and 1:45 there was loss of blood from the stomach. This was followed by improvement in the swelling of the eyelids and throat.

Jan. 23, 1902. The patient had another hemorrhage. Three days previous to this, he had had yellow, watery stools without epigastric tenderness. At this time, he had sharp stinging pains in the cartilage of the left ear. The nares were now open and he ate better, but was pale and weak.

March 4, 1902. The pharynx was more swollen laterally and at the lower third, and the patient had great difficulty in swallowing.

The lymphatics in the neck, cheek and eyelids were worse. The uvula was two thirds its former size and the nares clear. His pulse intermitted one beat in seven and he felt weak. The treatment had been stopped three times from acute attacks of influenza which he shared with other members of the family. This interrupted treatment so that it was difficult to estimate its value.

May, 1, 1902. Examination showed the urine and sputum to be negative. Examination of the blood gave hemoglobin 75%, whites 6,800, reds, 3,568,000. There was no increase in the lymphocytes.

A microscopical examination had been made May 17, 1901, by Dr. H. C. Low, of the Boston City Hospital, from a snipping from the posterior wall of the pharynx. He reported as follows: Gross appearance of a spreading growth on the posterior wall of the pharynx, growing down on two sides in ridges as large as the little finger. Piece taken from the growing edge lower down.

Microscopical description. — A round cell growth very much resembling lymphoid tissue, showing very few mitotic figures and of evident slow formation. It has for the most part a definite capsule, but in places is infiltrating the muscle tissue. The clinical history must be relied upon to determine its malignancy. A large definite tumor growth would suggest sarcoma. This section was afterwards seen by two other pathologists, and pronounced undoubtedly lympho-sarcoma. At this time, the treatment was changed to arsenic and he was put upon Fowler's solution which was gradually increased to 15 minims t. i. d. This was continued for a year, then omitted for a year and then resumed for two weeks, and then again omitted. It was twelve months before there was any decided change. The throat was then better, but he was thin and weak and had given up his business interests.

Examination, Sept. 25, 1905. Three years later the patient showed no spleen, and his general physical condition was negative, except for the old heart lesion which was not giving symptoms. Locally, the nasopharynx was entirely clear. The bridge of the nose remained broad, and the eyes, which for the last twelve months had been entirely normal, had just begun to be puffy again. It was for this that he again consulted me. He had had no hemorrhage for four years. There were no glands, pallor or muscular weakness. His appetite was good. His weight was 154 lb., which was normal. The blood showed no abnormal cells and the leucocytes were not increased. On account of the returning puffiness of the lids the arsenic was resumed.

Oct. 25, 1905. There was a hemorrhage from the left naris, which saturated two handkerchiefs. This relieved the previous blocking of the left naris but not on the opposite side. A few weeks of the arsenic treatment was followed by normal conditions.

Nov. 17, 1906. The patient was shown at a meeting of the N. E. Laryngological and Otological Society, and the members concurred in the probable diagnosis, although there was then no clinical evidence of the local process.

May, 1, 1906. For the past year, Mr. W. had been better than for five years. He had been of normal weight, good color, bright mentally and had been able to take active interest in his surroundings, although he had retired from business.

April 13, 1906. While in his carriage house with his son, the suspended shafts of the carriage fell, knocking off his hat and grazing the left side of his nose from which a drop or two of discolored serum exuded. It was not enough to attract his attention until noticed by his son. On Sunday, the skin became red and edematous accompanied by a chill and a temperature of 102.5°. Monday this area became circumscribed and as it fluctuated, it was opened under ether by his family physician, and pus evacuated. One week later, after some pain of the joints, thick pus was again evacuated.

April 27, 1906. The patient complained of a fullness of the throat. This was followed by a profuse discharge and evidence of collapse. In the afternoon, there was more discharge so abundant that his physician thought that he would choke to death, and which was described as a frothy mucus which appeared as fast as it could be wiped from the mouth.

May 7, 1906. I saw him in consultation. At this time, his temperature was 100°, P. 96, R. 28. His pupils were contracted. He was delirious but spoke intelligently on being aroused. Examination did not reveal anything abnormal in the naso-pharynx or throat.

May 10, 1906. I saw him again and his condition was one of coma from which he could not be aroused. Death followed about noon, apparently from toxemia.

Reports of Societies.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

MEETING HELD AT THE BOSTON CITY HOSPITAL, NOV. 16, 1906.

THE President, DR. F. L. JACK, in the chair.

DR. F. E. KITTREDGE, of Nashua, N. H., read a paper on

TWO CASES OF BRAIN ABSCESS.[1]

DISCUSSION.

DR. F. B. LUND: It seems to me that these cases which have been presented are very brilliant ones. The majority, as we know, arise from ear disease, and the fact that they have had a suppurating ear is very important in making the diagnosis. But now and again cases occur where, if the ear is not suppurating, it is difficult to tell where the brain abscess started. The symptoms are very like those of brain tumor; many have no temperature, the only symptom you are sure of

[1] See page 396.

is very bad headache and usually vertigo, and about 35% have optic neuritis. The patient usually has slow cerebration. In fact, many of the symptoms may be absent, making the diagnosis difficult.

Now, as we know, Virchow has pointed out that brain abscess is frequently secondary to disease in the lungs and pleural cavity. I have specimens of two cases, removed at autopsy, which came into this hospital on the surgical side only two days before they died. The cerebellar abscess was a sailor who had been sick seven or eight days in a typhoidal condition; he had headache, a certain amount of dizziness and one night fell out of bed. Our examination was negative. An abscess was found in his cerebellum, which is there on the table. No lesions were found in his body except in the pleural cavity; from adhesions there he may have had an old abscess.

Another case, a little girl, with abscess of the white matter of the temporal lobe, came to the hospital two days before she died. She had been sick four and a half months with symptoms of some disease in the left temporal lobe. The only thing that was known to indicate that she had lung disease was that she had once expectorated blood in large amount. Dr. Bullard made a diagnosis of cerebral tumor. She had no temperature, but she died after being here two days and at the autopsy disclosed this abscess in the white matter and a pin imbedded in the lung. The cerebral abscess was secondary to an abscess in the lung, undoubtedly.

Now the question of drainage. I have operated personally on but two abscesses: one was secondary to compound fracture, and died, and the other to ear disease, and although the abscess was in the temporal lobe it was a very acute affair, and he died three days after the drainage was put in. I think that other things being equal, a case of long standing, a chronic case, is more apt to recover because the bacteria are less active than in the early acute ones. The question of drainage of the brain is a very difficult one. As Dr. Kittredge has said, the brain falls in and shuts off the drainage tube, and if you pack it with gauze it does not drain well. In a case I have recently had I drained with a roll of rubber tissue, but it was not successful. The cause of death was meningitis, which spread down the spine from the membranes of the brain.

The director that Dr. Leland put in nine different directions in the brain I do not think is a very good instrument. I do not like it because the hole in it gets plugged; a little thick pus will plug a hole like that. I think if you use a grooved director and pass it with another director and follow along the curve, then separate them a little, you get a very good instrument to locate pus. But the question of drainage I hope to get some light on, and I think it one of the most difficult questions that we have to meet, how to drain a cavity in the brain tissue.

Dr. P. C. Knapp: Dr. Lund said very justly that the diagnosis of brain abscess is an extremely difficult thing, and that is especially true with latent abscesses. The symptoms, with the exception of the fever and of the chills, which are by no means constant, are often very similar to those of brain tumor, excepting that an optic neuritis is not quite as common.

In the otitic abscess we have considerable help in the diagnosis by discovering the existence of a suppurating ear, and especially if the suppurating ear is only on one side, but in the cases where both ears suppurate the diagnosis of the abscess is often much more difficult. In those cases I think the local pain and local tenderness are a very distinct help, although by no means infallible. Again we are helped a good deal by knowing that as a rule the otitic abscess occurs in the temporal lobe, or in the cerebellum, and it is often possible after operating on the ear and following up the suppuration to follow directly up to the abscess. Unfortunately in many of these cases the diagnosis becomes difficult from the fact that, on the right side in particular, the lesion of the temporal lobe is apt to cause no definite localizing symptoms; the same is true of abscess in the cerebellum, and therefore we must depend largely upon the location of the pain and tenderness, and possibly upon the symptoms from disturbances of adjacent parts. In one or two of the cases reported to-night the existence of a localized convulsion beginning in the face would, of course, be an indication of an abscess in the temporal lobe. On the other hand, a partial hemiplegia, I think, is more apt to occur with cerebellar abscess than with abscess of the temporal lobe. Any indication of a cerebellar ataxia is, of course, another help, but it is rather by the occurrence of a number of symptoms pointing either to the temporal lobe or the cerebellum that we are helped the most.

There is rather a curious feature about these very brilliant successes in brain surgery that have been reported here to-night, namely, the very great destruction of the temporal lobe without serious consequences. I do not see how there could have been very much left of the temporal lobe, and it was the left temporal lobe besides, in Dr. Leland's case, and yet he assures me that there is no intellectual disturbance and no speech disturbance. In the other cases which have been reported, in spite of the destruction of a considerable portion of the temporal lobe by abscess, as in Dr. Jack's, with a temporary aphasia, there has been no permanent loss of speech function. In cases of tumor of the temporal lobe it has been my experience that, even when on the right side, the disturbance of the intellectual function has been very great, as great if not greater than in tumors of the frontal lobe. Such cases as this of Dr. Leland's particularly seem to afford some corroborative evidence of the very heretical stand which Marie has taken on the subject of aphasia, that there is no such thing as aphasia; it is not a true loss of speech, but is simply a condition of mental failure due to the lesions.

Dr. F. L. Jack: In August, 1901, a patient was brought to the Eye and Ear Infirmary, moribund, having been in this condition for several hours. Diagnosis of brain abscess was made from the history and symptoms. He was put on the operating table, and the floor of the middle fossa, for a half inch in width, was removed as far as the tegmen of the antrum. A small spot of discoloration was found on the dura, and through this a very thin bladed knife was thrust, opening a very large abscess cavity in the temporosphenoidal lobe. When the pus was evacuated the pulse and breathing apparently stopped. Patient revived, however, but was not in a condition to have a radical operation performed.

There are one or two interesting things in connection with this case. He exhibited amnesic aphasia, which persisted for several months, gradually disappearing. His occupation is that of a newspaper reporter. He had also another complication, viz., epileptic seizures, or rather seizures of epileptic form. Dr. Knapp takes exception, I think, to calling this epilepsy. The patient is to-day perfectly well. For perforating the bone, the old trephine is still largely used, but we find at the hospital that the Krause bone-cutter is better.

Dr. Philip Hammond: The amount of brain tissue that must have been removed in the case of the small Indian boy was really astonishing. I have myself made various holes in the head and know that a certain portion of the brain may be removed with impunity, but, as I say, it was perfectly amazing to see the size

of the hole in this little chap's head; I think I could easily have placed one of my fists in it could I have got my hand through the opening.

DR. KITTREDGE: I think my little Indian boy had had an abscess there for some time. His pulse was very slow, down to 60 a good deal of the time, and he had an attack of vomiting that I laid to some indiscretion of the diet, but as I look back on it I think he had an abscess in the brain at that time. There was no odor to the pus in his case.

About the drainage,— in the second case I had a small-sized cigarette drain at the opening, and then I carried a piece of gauze right above the cigarette, so I practically had double drainage there.

DR. FRANCIS P. EMERSON, of Boston, read a paper on

GENERAL LYMPHO-SARCOMA ACCENTUATED IN THE PHARYNX.[2]

DISCUSSION.

DR. S. B. WOLBACH: The original sections present all the characteristics of a malignant lymphoma, that is, a malignant tumor composed of cells resembling active lymphoid cells, such as are found normally in the germinal centers of lymph follicles. In this case the sections show invasion of the muscles and mucous glands of the soft palate.

At the autopsy nothing remarkable was found. There was no trace of a new growth. Two small nodules were found in the aryteno-epiglottic folds, and microscopically these consisted of hyperplastic lymphoid tissue without suggestion of malignancy. Nothing was found to explain the symptoms which appeared a few days before death. The brain was negative. The source of the intestinal hemorrhages was not discovered. The abdominal cavity was filled with embalming liquid and escaped intestinal contents. The viscera were full of perforations made by the undertakers so that we were greatly handicapped in making the autopsy.

The lymphomata have recently been grouped under the heading of lymphocytoma. This term includes tumors arising from lymphoid structures and from the bone marrow. The literature is very voluminous and the terminology employed by the different authors very confusing. Of the various names proposed for tumors similar to the case of Dr. Emerson, I think lympho-sarcoma is the preferable one.

A number of cases of spontaneous cure of lympho-sarcoma have been reported while many have been reported as cured after treatment with arsenic. Some cases which were apparently cured with arsenic have recurred and ended fatally after several years. This case with the presence of enlarged glands might possibly be called a case of Hodgkin's disease. The term lympho-sarcoma is a better one, especially as a number of pathologists reserve the name of Hodgkin's disease for tumors with special histological features.

The age in this case is unusual. In a list of 58 cases, only 4 occurred between the ages of forty and fifty, while 27 occurred between the ages of ten and thirty.

DR. J. P. CLARK: I should like to ask if the case did not improve under specific treatment at first, and if so, could syphilis be ruled out?

DR. G. L. RICHARDS: I recently had a case where a diagnosis was made of syphilis and of tuberculosis. The patient has improved under arsenic treatment very steadily. Clinically, I think this was sarcoma.

DR. EMERSON: In my own mind I was very much dissatisfied with the result of the specific treatment, for the reason that just as the patient would begin to gain he would come down apparently with an acute infection. That this infection was due to influenza seemed probable as his wife and son were simultaneously affected. This necessitated the calling in of his general practitioner and the interruption of specific treatment so that it was not followed as continuously as it should have been.

DR. EMERSON presented a paper on

SARCOMA OF TONSIL TREATED WITH COLEY'S TOXINS.[3]

DR. E. W. HOLMES showed a case illustrating

A SPECIAL SKIN FLAP.

This case was operated on two years ago last February for a simple mastoid, and made slow recovery. On the 5th of September, this year, he was returned to the hospital, and his condition was such that it was thought best that he be operated on again at once. I showed him, to illustrate, a special kind of skin flap that I had been making. I did not think it could be done in this case because there had been an operation and there were adhesions, but I was able to make the flap and adjust the same and he was able to leave the hospital in two weeks, and now he has a perfectly dry ear, with perfect epidermization.

I have done this operation in 31 cases, and I hope to be able to show many of them. It saves considerable time in convalescence and in only one or two cases has the skin sloughed. The usual semilunar post-aural incision is made but through the skin only, care being taken not to injure the underlying periosteum. The anterior skin flap is now dissected from the periosteum and posterior and superior cartilaginous wall of external auditory canal is incised. The whole auricle is carried forward exposing the bony auricular canal. An incision is now carried from junction of superior and anterior canal wall down to annulus, then just outside and parallel to annulus to junction of inferior and posterior quadrant of canal, and then extended outward to outer rim of bony canal. An incision is now made from this point over mastoid toward tip, and another from the anterior superior starting point along linea temporalis. We have now to elevate and have a flap made up of all of the periosteum covering mastoid bone and the skin and periosteum covering superior and posterior walls of auditory canal. This is rolled back and protracted with gauze in normal salt solution during the operation upon the bone. After this is completed the flap is carried forward and adjusted in middle ear. The cartilaginous canal attached to auricle is slit so as to produce a large canal for subsequent treatment of ear and the post-auricular wound is closed with sutures.

TRANSACTIONS OF THE TWENTY-NINTH ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

HELD AT WASHINGTON, D. C., MAY 7, 8 AND 9, 1907, IN CONNECTION WITH THE SEVENTH TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

(Continued from No. 11, p. 372.)

SECOND DAY (continued).

MODERN PROCEDURES IN EXCISION OF INTRINSIC MALIGNANT GROWTHS OF THE LARYNX.

DR. J. SOLIS-COHEN, of Philadelphia, presented this paper. He said that modern procedures virtually exclude all endo-laryngeal methods. This procedure comprises a central division of the thyroid cartilage and sometimes of the crico-thyroid membrane, cricoid cartilage, or even of the trachea, as may be requisite to fully expose the morbid mass and its immediate surroundings when the wings of the thyroid cartilage are

[2] See page 397.

[3] Laryngoscope. See March, 1907.

separated with retractors or with stout loop ligatures. He regards preliminary tracheotomy as not requisite except where strong indication existed for precautional use of a tube after operation. The whole may be done under either local or general anesthesia, choice being dependent in great measure on the location and apparent extent of the neoplasm and in part on the predilection of the operator. The author then described in detail the steps of the modern operation. He prefers to follow his own method of beginning with an ordinary tracheotomy, and after introduction of the canula to incise the skin only so far as to uncover the larynx, thus leaving a broad bridge of skin above the canula. This lessens considerably the dimensions of the external wound and favors reunion in the sequence. The bridge can be sacrificed if necessary. In his own practice no stitches are taken in the skin wound. Instead, a longitudinal strip of perforated plaster is placed along each side of the neck an inch from the line of incision, and then this plaster is sutured in several places along the line of thyrotomic incision through the perforations and tied only so tight as to bring the severed edges of skin to gentle apposition and leave the wound free for easy and immediate inspection. No threads are passed over the line of tracheal incision which is left bare to favor expulsion of matters from the air passages. A pad of gauze is moistened in bichloride solution while a broad strip of antiseptic gauze is doubled over a narrow strip of adhesive plaster and secured to the next so that the gauze hangs down over the dressing upon the seat of the wound. Post-operative treatment is most important and a skilled assistant should be on hand for the first twenty-four hours. Should it become necessary to re-introduce the canula in the trachea for any length of time, the atmosphere near the head of the bed must be moistened so as to prevent desiccation of secretion. The author paid a generous tribute to the recent work of Semon and Butlin. Dr. Cohen's chief points of variance from the usual methods are the retention of the skin-bridge above referred to, the removal of the growth *en masse* upon a plate of excised perichondrium and superjacent tissue, dressing with compound tincture of benzoin, avoidance of sutures in the cartilage and skin and the special method of loosely approximating the edges of the incisions. The tincture of benzoin is mopped thoroughly on the raw surface left after removal.

NON-RECURRENT CARCINOMA OF THE LARYNX, REMOVED THROUGH THE NATURAL PASSAGES.

The report of this case was made by DR. E. FLETCHER INGALS, of Chicago. The patient was a man of forty-four years, laborer, who came under observation in January, 1906, complaining of hoarseness of six years' duration. For the last three weeks he had felt some pain in the region of the left half of the hyoid bone, none previously. Had had also a recent catarrhal cold. There was no dyspnea but he could not talk as a rule much above a whisper. Had formerly been a mild smoker. Had lost a pound or two and had a slight hacking cough. A pinkish gray tumor involved the anterior $\frac{2}{3}$ of the left vocal cord filling the ventricular opening and considerably obstructing the glottis, crowding outward into the ventricular band. The growth had the appearance of malignancy, but owing to its long duration the author hoped it was only papillomatous. The greater part of it was removed at the first sitting. Three days later more fragments were removed and there was considerable pain felt by the patient in the larynx in the subsequent days. The patient was not seen again for a week, and in the meantime the microscopist had reported that the neoplasm was a slowly growing carcinoma with growth toward the surface and considerable kerato-hyaline transformation of the epithelial cells. At this time Dr. Ingals found a growth at the anterior end of the left cord larger than at the last visit, and this was thoroughly removed with a Mackenzie forceps. After removal of this a growth of about the same size was seen just below the cord and it was also removed. When the patient returned four days later he was very hoarse. Sedative measures were instituted and continued for several months. The patient's condition gradually improved and in two months it was noted that the voice was much clearer. The patient was again seen over a year after the operation, and for the last three or four months his voice had been perfectly normal. A slight thickening of the cords was noted but was referred to a recent cold. Dr. Ingals stated that although interference with malignant laryngeal growths is likely to stimulate their increase, it appeared to him that when there was doubt as to exact nature and when conditions were such that we had a hope of removing the neoplasm thoroughly by the endo-laryngeal method, this latter should be selected. If the examination revealed malignancy and the tumor speedily returned, laryngotomy or laryngectomy should at once be advised if there was reason to believe that a thorough removal could be effected.

EPITHELIOMA OF THE LARYNX; REMOVAL BY THYROTOMY; NO RECURRENCE AFTER THREE AND ONE-HALF YEARS.

DR. HENRY L. SWAIN reported this case, his patient being a clergyman of forty-seven years who came under observation in March, 1903, with increasing hoarseness dating back several months. The larynx was slightly congested throughout and much swollen on the entire left side so that no clear view of the true cord could be had. Subsidence of the swelling later revealed a white papillomatous mass growing from the upper aspect of the cord and apparently coming out of the laryngeal ventricle. Nearly the entire cord was covered by the growth. After some training of the patient the entire visible mass was removed in small pieces as it proved very friable. Microscopical evidence was negative. Some two months later the mass returned and was again removed. This was done five times in the next two months. Six months after the first appearance of the patient it was decided that something more radical must be done. Up to this time no positive evidence of malignancy was manifest under the microscope. Thyrotomy and exsection were then done after the usual modern methods. Recovery was rather slow but satisfactory. At the present time the patient speaks in a perfectly audible but rather husky voice. A fairly good presentment of a vocal band has been produced in the shape of a dense white band where the true cord should be. The false cord is flatter than usual and the ventricle has been obliterated. The reporter laid emphasis on the following points: 1, the ever present difficulty in coming to a diagnosis. 2, the wisdom, even when in doubt, of operating so as to insure complete removal. 3, the repeated observation of the surprising difference in the appearance of the growth when the larynx is opened. 4, the impossibility of being sure everything malignant has been removed; hence the value of using the Paquelin cautery. 5, the possibility, when the larynx is roomy, of shutting up the whole wound instead of leaving the tracheotomy tube in place. 6, the unquestioned advantage of the absolutely recumbent position with the feet raised. 7, the small amount of suffering in an intelligent, brave and tractable patient as compared to the mercy of a complete cure.

The papers of Drs. Cohen, Ingals and Swain were

discussed together. Dr. Ingals saw no reason why cocaine and adrenalin should not be used together so as to obviate so much mopping. He had had many disagreeable symptoms following cocaine. The adrenalin might prevent the absorption of the cocoine and thus prevent constitutional effects. An excess of gum benzoin, say 2 dr. to the ounce, was an advantage as it made a firmer film over the tissues.

DR. THOMAS HUBBARD had observed that in etherized patients adrenalin did not produce ischemia, at least in the nose. He did not know any reason for this. He had not made the same observation with reference to chloroform.

DR. J. PAYSON CLARK gave the history of a case of laryngeal cancer operated on ten years ago. The patient was still living at seventy and was in good health with a very firm, strong voice. A similar case history was given by Dr. Gordon King, of New Orleans, his patient being alive and well two years after operation, and with good voice.

DR. R. C. MYLES believed that there was something individual in these cases. The cancer might be of the superficial type and a good result follow operation, but he did not believe that cancer of the deeply penetrating type could be cured.

DR. D. BRYSON DELAVAN, of New York, gave the history of a case illustrating the fact that the picture as seen in the mirror gave a very misleading idea as to the extent of laryngeal involvement. His patient had been operated on ten years ago and was still in fair condition. Some of the surgeons of the present day were coming to the conclusion that cancer did not admit of cure. The time limit was not to be relied on. When we place it at three years we are in error as experience frequently shows. Under the method as presented by Dr. Cohen we were likely to secure the best results. He thought, however, that all methods were hopeless and in the main disappointing. We should continue our investigations in the hope of discovering some cure which would put surgery out of the field entirely.

DR. J. PAYSON CLARK stated that an operation which would prolong life was often justified even if it eventually proved fatal. He related the history of one case.

DR. COHEN closed the discusssion.

Case reports by DR. CLEMENT F. THEISEN, Albany, N. Y.

EPITHELIOMA OF THE LARYNX; TOTAL LARYNGECTOMY INCLUDING REMOVAL OF A PART OF THE TRACHEA; DEATH FROM PNEUMONIA ON THE THIRTEENTH DAY.

CASE I emphasized the necessity of early diagnosis and also the fact that microscopical examination is often difficult and that the laryngologist may lose valuable time owing to the pathologist's uncertainty. The patient was a man of fifty-seven years with a husky voice for some months. A flat, nodular, firm growth was seen involving about two thirds of the left cord. Surrounding parts were reddened. Examination of small fragments suggested that the condition was merely inflammatory. The reporter's original diagnosis, naked eye, had been carcinoma. Under palliative treatment there was temporary improvement, but some weeks later it was noted that the whole of the left cord had become involved and there were evidences of encroachment on the right cord also. The diagnosis was now positive and the dyspnea had become so great that a tracheotomy was done under local anesthesia.

After some delay on the patient's part he consented to a radical operation. A total laryngectomy (Gluck) was done three weeks later. Pneumonia proved fatal on the thirteenth day. The microscope showed typical epithelioma. It is worthy of note that the marginal epithelium of the growth was found in a normal condition, but its transformation into malignancy could be definitely seen in the sections. The growth itself was entirely of epithelial origin, and irregular columns of spheres of epithelial cells could be seen growing into the underlying tissue in all directions. In the centers of these areas there was manifest a tendency to rapid degeneration for the cells were in many places replaced by detritus. The interstitial connective tissue was thickly infiltrated with small mononuclear leucocytes and plasma cells and in some areas there was proliferation of the small capillaries.

CASE II. *Sarcoma of the pharynx.* — The patient was a girl of eight years with a history of dyspnea for several months. A large mass was seen in the throat, including the soft palate and pushing it forward. The growth extended almost to the epiglottis and apparently involved the naso-pharynx. Glands were enlarged on the left side of the neck. It was decided that the case was inoperable and the mixed toxin injections were given. Microscopical examination of a piece of the growth was not decisive. Clinically there was no doubt as to malignancy. Injections directly into the mass were begun and after some time constitutional reaction was noted. Adrenalin injections were not used as the method was too slow to effect any result in this case. The iodides were also without result. Nothing seemed to make any impression whatever on the growth. Death came from increasing dyspnea about two months after the patient came under observation. The microscope showed spindle-celled sarcoma with hyperplasia of adjacent lymph nodes. The reporter referred to similar cases recently recorded in the literature of sarcoma.

THIRD DAY, THURSDAY, MAY 9.
SESSION AT 10 A.M.

THE PROBLEM OF ASEPSIS IN THE ROUTINE OFFICE WORK OF THE LARYNGOLOGIST.

A paper on this subject was read by DR. THOMAS HUBBARD, of Toledo, Ohio. He made a plea for the same aseptic precautions in office work as in major surgery, and believed that in future more of the minor work now done in the office would be transferred to special hospitals. Most of our office work is now done under conditions which do not measure up to the requirements of modern aseptic and antiseptic surgery. All operators have experienced anxiety over cases having symptoms of sepsis, and cases of delayed healing arise which cannot be accounted for by defective operation. He then presented detailed features of office routine which he considered essential, dwelling on disinfection of instruments, sterile solutions, napkins, care of instruments to prevent rusting, etc., sterilization of the area to be operated on, avoidance of too firm packing, quality of air used in atomizers and air tanks, etc. A little trouble taken in all these respects would remove practically all the possibly injurious factors which exist in the routine of the office as ordinarily carried on. The surgeon in whatever special field or working environment must bear in mind that only by high ideals in the refinement of cleanliness, in both theory and practice, can he expect to stimulate his assistants and associates as to the proper discharge of their part of the work. The aim of every operator should be to develop a thoroughly consistent system of approximately surgical cleanliness.

DR. GORDON KING presented a device for sterilizing sprays in office practice. He had been very much interested in Dr. Hubbard's statements in regard to the sterilization of instruments and of the air. Filters placed over the ends of sprays showed conclusively that as ordinarily used the spray must project many micro-

organisms over the operative field. Dental napkins were of much service in office work but paper napkins could be used instead and they were practically sterile.

Dr. W. F. Chappell, New York, spoke of the danger of infecting the doctor from the sputa of patient. He himself had had a septic dermatitis of the face, eyes and neck during the past winter from the expectoration into his face by a patient of pus from an old pharyngeal abscess.

Dr. George L. Richards suggested the use in such cases of ordinary automobile goggles which could be made to hold a gauze mask.

Dr. R. C. Myles was accustomed to cover his patient and himself with a special kind of oiled silk. He frequently had a nurse hold a pane of glass before his face during operations. Such a device was more convenient than a glass shield suspended from the ceiling. Instruments must be boiled frequently. Asbestos-packed syringes were the only ones meeting all requirements. It was true that we had no definite knowledge of the occurrence of much sepsis occurring in office practice, but it was possible that there were some forms of septic conditions not localized in their manifestations.

Dr. Hubbard closed the discussion, stating that where there was a chance of doing an aseptic operation we should sterilize our hands and wear rubber gloves.

A review of the methods in use for the removal of adenoids with a description of a method which is thorough, rapid and safe.

This review was presented by Dr. George L. Richards, of Fall River, Mass., who exhibited a large collection of the various instruments employed for the purpose. He thought that undue stress had been laid on the necessity of cleaning out the fossa of Rosenmueller on account of its effect on the ear. His own preference is for the adenotome of Schuetz which had been presented to the Association some years ago by Dr. Farlow. It finds its best employment in young adults without anesthesia. The operator should have three sizes as there were but few pharynges in which one size or the other would not answer every requirement. In case of young children under anesthesia, and held in the arms of the nurse, a palate hook should be used so as to gain a good idea of the size and exact location of the mass to be removed. A little side dissection of the growth with the finger toward the center aids in getting it within the fenestrum. The instrument is then pushed firmly back against the naso-pharynx and as the knife cuts through the growth comes out in one piece. Instruments of different sizes may be used in the same case if necessary to remove small fragments left after the main cut. The adenotome is a slender instrument and the knife may occasionally break. The instrument should be carefully examined before each use and care is also required in taking it apart and putting it together again.

Dr. John W. Farlow recalled a previous meeting of the Association at which he had presented the adenotome advocated by Dr. Richards. The disadvantage of the instrument was that we could not well see into the naso-pharynx and determine just how large an instrument should be used. Hence he did not prefer the adenotome for very young children. In proper cases, however, the guillotine seemed to him to be the ideal instrument.

Dr. D. Bryson Delavan said that his experience with this particular instrument had not been fortunate as he had had one break leaving a portion of the metal in an adenoid mass. Fortunately, it was removed without untoward incident. One objection was that the pharynx has to fit the instrument whereas the latter should fit the pharynx. His own preference was for the Frothingham modification of the Gottstein knife. Hard rubber palate retractors were preferable to those of metal. He believed that it was absolutely necessary to thoroughly clear out the fossa of Rosenmueller in order to obtain relief from ear symptoms.

Dr. W. K. Simpson, New York, was also an advocate of the Frothingham curette. The Concannon forceps he thought to be the best model of this class of instrument. It had a guard which enabled the adenoid to be removed in one mass.

Dr. L. A. Coffin believed that the success of any instrument depended largely on the "man behind the gun" and his experience. There were very many poor models on the market of good instruments which had been changed by the makers from the original models.

Dr. Henry L. Swain was also a partisan of the adenotome. If, however, we had in the naso-pharynx a central mass on two sides we were liable to miss with this instrument the side strings from the main masses. The adenotome ought to be followed up with a blade-curette.

Dr. W. E. Casselberry had used the adenotome for a long time but was not satisfied with it. There was a liability to leave small pieces of tissue behind the posterior nasal openings. Some sort of supplemental operation was therefore necessary. This was a limitation of the efficiency of every adenotome he had ever seen. The adenotome would answer if used with the curette.

Dr. G. A. Leland said that unless the fossa of Rosenmueller was cleared out, there would be recurrent earache. Smaller instruments than we generally use would suffice for the purpose of cleaning out the fossa.

Dr. R. C. Myles said that the finger ought always to be introduced into the naso-pharynx in order to guide the intelligent application of any cutting instrument. The axis of the instrument should be kept in line with the axis of the head. Unless this was done, parts would be damaged. The fossa of Rosenmueller ought always to be cleaned out.

Dr. G. Hudson Makuen exhibited a modified Gottstein instrument which he had found of great service.

Dr. Richards closed the discussion.

(To be continued.)

Book Reviews.

On Treatment. By Harry Campbell, M.D. B.S., F.R.C.P. Pp. 421. New York: William Wood & Co. 1907.

This is a volume of 421 pages which seeks to discuss medical treatment from a somewhat psychological and, therefore, unusual standpoint. Such topics as the following, for example, are taken up: the education of the physician; the physician's mental personality (the word "mental" might well have been omitted); the co-operation of the patient; instinct and reason in relation to treatment; rationalism and empiricism. The latter part of the volume discusses certain general matters of hygiene, such as the therapeutics of fresh air, clothing, rest, diet, together with three chapters on psycho-therapeutics. It is increasingly evident that this latter subject will soon not fail to find a place in all discussions of treatment. In general, the book represents a personal standpoint, and in this fact lies its suggestiveness. We have no hesitation in commending it, particularly

to those physicians who look upon their professional work from a philosophical as well as from a practical standpoint.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. V. Pp. 536. Illustrated. Edinburgh and London: William Green & Sons. 1907.

The fifth volume of this encyclopedia carries the subject matter from "Inulin" to "Lumbar Puncture," and contains 908 headings. It also marks the publication of one half the entire work. The same principles which have been apparent in the earlier volumes are continued in this, namely, brief articles which are more comprehensive than are to be found in an ordinary dictionary, together with others which although hardly approaching the dignity of monographs, constitute admirable discussions of various topics. For example, the subject of labor occupies 150 pages, and really serves as a brief compendium of obstetrical procedure. The larynx, life insurance and the liver and kidney also receive a very considerable amount of space. In the section on joints, which is also fairly complete, we miss illustrations which would do much, if properly selected, to clarify this general subject.

A Treatise on Surgery. By GEORGE RYERSON FOWLER, M.D., Brooklyn — New York City — Examiner in Surgery, Board Medical Examiners of the Regents of the University of New York; Emeritus Professor of Surgery in the New York Polyclinic; Surgeon to the Methodist-Episcopal Hospital; Surgeon-in-Chief to the Brooklyn Hospital; Surgeon to the German Hospital. Vol. II. Containing 888 text-illustrations and 4 colored plates, all original. Philadelphia and London: W. B. Saunders Company. 1907.

Our attention has recently been called to the second volume of this noted work of the late Dr. George R. Fowler, a handsome book of 714 pages, excellently well illustrated. In this volume, the final volume of the set, the subject of regional surgery is completed. It is in some respects more fully presented than is usual in books of this class, and is classified in chapters devoted to the Surgery of the Dorsal and Lumbar Vertebræ; Abdominal and Pelvic Organs, including Genito-Urinary Surgery in the Male; Female Pelvic Organs; Upper Extremity; and finally the Lower Extremity.

The arrangement of the text is such that the important facts and headings of subjects are printed in heavy type so as to form an abridged classification or summary of the subject which is incorporated in the body of the work. In general, in presenting a subject the traumatic lesions are presented first, then the different acute and chronic pathological conditions, concluding with the neoplasms. Afterwards diagnosis, prognosis and treatment are considered. At times the description of the lesion or disease under consideration is full and complete. At times it is concise; essentially a mere summary. Frequently the authority for the statement made is given by quoting simply the originator's name. The chapter on peritonitis, while brief, is one of the interesting chapters, and presents the most advanced view of the subject. As one would expect from the author's interest in this lesion, the chapter on appendicitis is a full one, eight or more pages being devoted to the operative treatment which is extensively illustrated. Hernia is another subject which has been treated by an extended description. This includes the unusual varieties such as obturator, lumbar, diaphragmatic, sciatic, perineal and internal hernia; lesions which are rarely or only briefly described except in reports of special cases or monographs.

Again in the chapters on the male and female genito-urinary organs the author has treated the subject much more fully than is usual in a work on general surgery. Specific disease of the urethra, congenital defects, surgery of the prostate and minor gynecological operations are all included in this part of the volume.

In the section devoted to the upper extremity fractures, dislocations and other injuries, such as stabs, gunshot wounds, etc., are first presented. Next the different inflammations, acute and chronic, other pathological processes and neoplasms. Finally, the operative procedures indicated are given with the treatment. Each part of the upper extremity from the shoulder to the fingers is treated on this plan. The operative treatment includes the ligation of the arteries of the special region under discussion, also the amputation, resection of joints, operations on nerves, etc.

In the chapters on the lower extremity some attention is paid to orthopedic surgery. For reduction of hip dislocation Dr. Fowler has selected the "Allis" and "Stimpson" method; for amputations the "mixed method" with either lateral or antero-posterior flaps or the "Teale" operation; for the foot and ankle the operations of Lisfrans, Chopart, Piragoff, with modifications. Wladimiroff-Mikulicz, Syme and Heuter are described.

The book is a very valuable one; it is well arranged, clearly, concisely written, the subject is as a whole fully presented, it is profusely illustrated with well-chosen "cuts." Special subjects are easily found by the aid of the table of contents, the method of paragraphing of the text, the heavy type for important words and subject headings, and finally by a full general index. To write such a book an author must have a thorough knowledge of his subject, a knowledge not only theoretical but also practical, obtained only by great clinical experience. Dr. Fowler has combined both, for as a student of medicine he was conversant with medical literature; as a surgeon he acquired actual knowledge tested by great clinical opportunities; as a teacher he learned how to impart his knowledge to others. Hence his treatise on Surgery is a work which is universally spoken of as a task well done.

H. W. C.

THE BOSTON

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PHYSICAL CONDITION OF PUBLIC SCHOOL CHILDREN.

A BODY of prominent educators, made up of the Commission on Physical Welfare of School Children, has just made a report through its chairman, Charles C. Burlingham, formerly president of the New York Board of Education, in which it is stated that about one third of all the public school children in the United States are probably the subjects of physical defects which keep them behind their proper grades, and yet which should be remediable with proper care. Based on the physical defects and home conditions of 1,400 school children of New York City, says the report, it is estimated that 12,000,000 of the children have physical defects, more or less serious, which should receive attention from parents and physicians. If the percentages recorded by the Board of Health in New York should be maintained throughout the country (and it seems likely that they would be, since adenoids and impaired vision, malnutrition and defective breathing are found in rural as well as urban schools), there must be 1,440,000 ill-nourished children, 5,615,000 with enlarged glands, and 6,925,000 with defective breathing, in the United States. The defects indicated are easily remedied, and many could be prevented by proper care, though except in the case of defective vision the causes are not always readily determined. Among the 1,400 children studied, only a trifle more than 10% are reported to be suffering from malnutrition, and of these, fewer than 14% come from families whose income is less than $10 weekly. Only 7.8% of the children were artificially fed from birth, and while more than 50% are reported as having only tea or coffee and bread for breakfast, fewer than 3% are said to have no meat or eggs during the day. In spite of unfavorable housing conditions, only 19% of the children born in 1,400 families died, and 53% of the families have lost no children. The Italian and Hebrew families have the largest average number of children, and also the highest mortality. Comprehensive plans for dealing with physical defects are outlined in the report. These include a thorough physical examination of all children, notification to parents, and the enforcement of existing laws. Where proper authority is now lacking it is planned to compel parents to take necessary measures in behalf of their children's health. Enforcement of health, tenement house and child labor laws and the establishment, in connection with boards of education, of departments of schqol hygiene are recommended, the duties of which shall be to see that school buildings are so constructed and so conducted as not themselves to produce or aggravate physical defects. It is also suggested that the school curriculum should be so devised and carried out as not to favor such defects, that there should be a study of the effect of school environment upon the child, and that hygiene should be so taught that the children themselves will cultivate habits of health and see clearly the relation of good health and vitality to present and future efficiency and happiness.

Dr. Luther H. Gulick, director of physical training in the public schools of New York, has been doing most excellent work in improving the condition of the pupils, yet when the budget of $31,641,324 was approved recently by the executive committee of the Board of Education, one member objected to the proposed increase of Dr. Gulick's salary from $4,000 to $5,000. A striking commentary on such a pennywise policy is afforded by the following statement by Stratton D. Brooks, superintendent of Public Schools of Boston, quoted the other day in a dispatch to a New York newspaper: "I recently estimated that the City of Boston has been annually spending about $100,000 on pupils who, because of physical defects, did not derive full benefits from their work. I recommended that such a sum would better be spent on a department which would try to eradicate physical troubles."

In an address to the principals of the public schools of New York, made in the hall of the Board of Education on Sept. 10, Superintendent Maxwell impressed upon them strongly the necessity of more vigilant attention to the physical welfare of the children under their care.

He maintained that it was their duty and that of the teachers under them to make personal investigation of the condition of the children, and to urge upon parents the need of medical attention where physical defects were discovered. In speaking of the medical inspection of school children he said that every assistance should be given to the officers of the Board of Health in their work. Special attention should be given to four classes of pupils: To overaged children, to determine whether their intellectual development has been retarded by physical defects; to children who are very evidently suffering from physical defects; to incorrigible children, who have a tendency toward idleness and mischievousness; and, finally, to the persistent truant. "Last year," Mr. Maxwell went on to say, "I tried to have every boy examined by a physician before committing him to the truant school. My attention was called to the necessity for this by an investigation I conducted in the truant school. I had all the pupils examined by a physician of the Health Department; and there was not one who was not suffering from some physical defect. There can be no higher duty incumbent upon the principals of this city than to see that these afflicted children, who are backward or incorrigible because of some physical defect, should receive some help. It is the duty of the principal and the teacher to see that the defect is discovered and remedied. Of course, you know that when the defect is discovered you have no means of remedy; but give no peace to the parents of the child until the defect is remedied."

TREATMENT OF INEBRIETY.

WITHIN the past year renewed attention has been directed to the treatment of alcoholic inebriety through the publicity which has been given to the Foxboro, Mass., institution for dipsomania and allied conditions. It will be remembered that last winter and spring a committee of the Governor's Council, of which Lieutenant-Governor Draper was chairman, investigated the affairs of the Foxboro state hospital on the basis of certain complaints which had been made by inmates. It was a gratification to the public to learn, after a painstaking investigation, that many of the charges were entirely unfounded, but it was also determined that the methods which had been employed were not such as to commend themselves to modern theories of treatment of the class of persons for whom the hospital was designed. The hospital idea had apparently been lost sight of, and the institution had become rather a house of restraint.

In view of all the facts, and recognizing fully the conscientious service rendered by the previous board of trustees, Governor Guild has, nevertheless, seen fit to request the resignation of this board and to appoint another composed in part, at least, of persons who have given the subject of inebriety special study from a sociological as well as medical standpoint. The board, the composition of which is given in another column, is in fact made up of men who have had training in social science, penology, business, medicine and the law, and as such must be regarded as exceptionally well fitted to cope with the difficult problem before it. The choice of Mr. Robert A. Woods as the chairman of the new board is a particularly happy one. Since his graduation from Amherst College in 1886, Mr. Woods has devoted himself to the study of social conditions, not only in this country but abroad. He is the author of an admirable book on "English Social Conditions," published in 1891, and since its opening in 1892, he has been in charge of the South End House in Boston, an institution which has flourished financially as well as a social venture under his administration. Mr. Woods' associates on the board are all men of wide experience in various walks of life, and there can be no question that the problem of inebriety and the possibility of its treatment will be approached in a judicial spirit and from many sides.

It is certainly in accord with modern tendencies to consider the abuse of alcohol as a disease rather than a crime. The difficulty of distinguishing between a natural human weakness, for which a man must be held responsible, and an abnormal physical and mental state over which he has no control is naturally one of the utmost delicacy and one which involves many considerations which extend quite beyond the individual. The experiment, if such it may be called, which is about to be inaugurated at Foxboro, will be watched with great interest by penologists and physicians as well as by the great bulk of the people who regard social movements purely from a utilitarian standpoint.

MEDICAL NOTES.

DEATHS IN THE ALPS. — The number of victims by accident in the Alps is said to be greater this year than ever before. Eighty persons have been killed and 22 injured in 90 accidents, whereas, 76 were killed last year in 71 accidents. It is interesting to note that of the 80 persons killed 38 were guides.

President International Dermatological Association. — At the Sixth International Dermatological Congress, held at the Academy of Medicine, New York City, Sept. 9–14, 1907, Prof. Thomas De Amicis, of Naples, Italy, was elected president of the next congress, which is to be held in Rome, in 1910.

Death of Dr. Gaylord Parsons Clark. — Gaylord Parsons Clark, A.M., M.D., Dean of the College of Medicine of Syracuse University and Professor of Physiology, died at his home in Syracuse, Sept. 1, 1907. On the day after registration, at the opening of the college, a meeting of students and faculty will be held, at which recognition of Dean Clark's long and efficient service will be made by the chancellor and others.

Award of the Kingsley Medal. — The Liverpool School for the Study of Tropical Diseases has awarded the Mary Kingsley medal to Dr. Charles Finlay, chief sanitary officer of Cuba, the discoverer of the transmission of yellow fever by the mosquito; to Col. W. C. Gorgas who, in 1902, as chief sanitary officer at Havana, made practically useful the discoveries of Dr. Finlay; and to Dr. Theobald Smith, professor of comparative pathology in Harvard University, for his investigations on the blood parasite of the so-called Texas cattle fever.

boston and new england.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 18, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 25, scarlatina 37, typhoid fever 24, measles 10, tuberculosis 61, smallpox 0.

The death-rate of the reported deaths for the week ending Sept. 18, 1907, was 17.29.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 14, 1907, was 201, against 219 the corresponding week of last year, showing a decrease of 18 deaths and making the death-rate for the week 17.20. Of this number 107 were males and 94 were females; 197 were white and 4 colored; 134 were born in the United States, 64 in foreign countries and 3 unknown; 40 were of American parentage, 143 of foreign parentage and 18 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 16 cases and 2 deaths; scarlatina, 28 cases and 0 deaths; typhoid fever, 32 cases and 2 deaths; measles, 13 cases and 2 deaths; tuberculosis, 48 cases and 21 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 12, whooping cough 0, heart disease 18, bronchitis 2 and marasmus 13. There were 14 deaths from violent causes. The number of children who died under one year was 70; the number under five years, 83. The number of persons who died over sixty years of age was 26. The deaths in public institutions were 75.

There was 2 cases and 1 death reported from cerebrospinal meningitis during the week.

Typhoid Fever in a Gypsy Camp. — It is reported that the Boston Board of Health has ordered a camp of gypsies who have been in Dedham, Mass., for the past month to move, since typhoid has appeared among them. The camp numbers 150 men, women and children, and up to this time one death has occurred.

American Electro-Therapeutic Association. — The seventeenth annual meeting of the American Electro-Therapeutic Association is being held in Boston this week. The object of this association is to discuss the therapeutic bearings of electricity and to advance the general cause of rational electro-therapeutics.

Closing of the Boston Floating Hospital Season. — The Boston Floating Hospital concluded its work for the summer on Sept. 14, the boat having been in commission for seventy-five days. During the summer 366 babies have been treated in the permanent wards; in the day wards 555 have been received. The award of diplomas to the nurses and other suitable exercises closed a profitable season.

Out-Door Camp for Treatmtnt of Tuberculosis. — An excellent report is given of the patients who have been treated at the day camp for tuberculosis in Mattapan. One hundred and fifty-seven patients have been enrolled during the summer, and of these three fifths have gained, one fifth have lost ground, and the other fifth did not remain long enough under observation to determine results. In general, the plan of treatment by means of a day camp has again proved a decided success.

Vaccination in Rockland, Mass. — The school authorities in Rockland are finding difficulty in enforcing the vaccination law in the schools. Opposition is being made by parents of pupils, and the objections have become so definite that a test

case will probably be made in the case of a pupil refusing vaccination who was dismissed by the teacher, but declined to leave school. It appears that certificates have been issued to various pupils by a certain physician of Boston who takes the ground that no child is a fit subject for vaccination. Refusal to accept these evidently biased certificates is one of the chief reasons for the existing difficulty.

DEATH FROM CHLOROFORM. — A recent suit against a physician of Plymouth, N. H., for alleged malpractice in causing the death of a patient through the use of chloroform has resulted in a verdict for the plaintiff. The circumstances under which the chloroform was administered was a surgical emergency in the case of a young boy, a practice which it was maintained by the defendant's attorney was entirely legitimate. In spite of an able argument, supported by expert testimony, a verdict was returned against the physician. It would be interesting to know what the judgment of a jury would have been in England under the same conditions, where chloroform is the anesthetic usually employed.

BOARD OF TRUSTEES OF FOXBORO, MASS., HOSPITAL. — The following men have been appointed trustees of the Foxboro Hospital for Dipsomaniacs: Robert A. Woods, of Boston, chairman, head of the South End House in Boston, and an active worker for the betterment of social conditions; Frank L. Locke, of Malden, Mass., president of the Young Men's Christian Union of Boston, and formerly inspector-general on the late Governor Wolcott's Staff; Edwin Mulready, of Rockland, Mass., probation officer of the Superior Court for the counties of Norfolk and Plymouth; Dr. T. J. Foley, of Worcester, a practising physician for upwards of ten years; Dr. William H. Prescott, of Boston, who has from time to time held various positions in the Harvard Medical School and in connection with city institutions; James H. Perkins, of Boston, vice-president of the American Trust Company, and W. Rodman Peabody, of Cambridge and Boston, a lawyer of distinction.

NEW YORK.

SELLING OF COCAINE, A FELONY. — Among the bills passed by the recent Legislature and signed by the Governor, which went into effect on Sept. 1, was one making it a felony to sell cocaine, or any preparation containing it, except upon the written prescription of a duly registered physician, and another making it a felony for any druggist to sell a substitute when a special article is called for.

PRECAUTIONS AGAINST CHOLERA. — Dr. Doty, Health Officer of the Port, is taking special precautions with vessels arriving from Russia, owing to reports of the presence of Asiatic cholera in the vicinity of Libau. The Russian liner *Lituania*, which came in on Sept. 13, from Libau and Rotterdam, was detained at quarantine for twenty-four hours, and a thorough inspection made of all her passengers and crew.

INTERNATIONAL DERMATOLOGICAL CONGRESS. — The Sixth International Dermatological Congress was very successful, and the daily sessions, held in Hosack Hall, at the New York Academy of Medicine, which was tastefully draped with the flags of different nations, were well attended. During the week a number of entertainments were given in honor of the members. Large evening receptions were held by Dr. James C. White, the president, and by Dr. and Mrs. L. Duncan Bulkley, and on the night before the congress adjourned there was a dinner at the Waldorf-Astoria.

UNEXPLAINED OUTBREAK OF TYPHOID FEVER AT GOUVERNEUR HOSPITAL. — An unexplained outbreak of typhoid fever has occurred among the nurses and attendants at Gouverneur Hospital. Seven of the nurses were attacked almost simultaneously with the disease, and besides them the housekeeper and a woman clerk who took their meals at the same table as the nurses, while none of the patients in the hospital contracted it. Dr. Armstrong, the superintendent of Bellevue, and the others of the system of public hospitals to which the Gouverneur belongs, at once requested Dr. Charles Norris, director of the hospital laboratory, to make an investigation to discover, if possible, the source of infection. Before this was undertaken, however, Dr. Armstrong himself made a thorough examination of the buildings and found that there were no sanitary defects to account for the outbreak, a conclusion which was concurred in by the inspectors of the Health Department. Dr. Norris has as yet been unable to trace the cause of the trouble, but regards it as probable that, since only persons eating at the nurses' table were attacked, those affected got the typhoid germs from some uncooked vegetable such as lettuce or radishes. All the nine patients are reported to be progressing favorably, and the

places of the sick nurses have been supplied from the training school on Blackwell's Island.

Mortality in August. — The weekly reports of the Health Department show that during the month of August the mortality in the city represented an annual death-rate of 20.12, as against 18.71 in July and 18.79 in August, 1906. Among the diseases in which there was a decline in fatality were the following: The weekly average of deaths from measles decreased from 27.75 in July to 15 in August; the weekly average from scarlet fever, from 17.75 to 4.25; from diphtheria and croup, from 32.25 to 21.75; from pulmonary tuberculosis, from 150.25 to 148; from organic heart diseases, from 117.5 to 114; and from cirrhosis of the liver, from 23.5 to 17.5. Among the diseases which showed an augmented mortality were the following: The weekly average of deaths from malarial fevers increased from 1.75 to 2.5; from typhoid fever, from 10.5 to 16; from whooping-cough, from 7.25 to 16.25; from pneumonia, from 43.75 to 52; from bronchopneumonia, from 77.25 to 89.25; from diarrheal diseases, from 323.75 to 410; from diarrheals under five years of age, from 313.75 to 383.25; and from cancer, from 58.5 to 64.75. The increased death-rate, as compared with that in August, 1906, is largely due to the increase in diarrheal diseases in infants and young children; but as the past summer has been for the most part a cool one, it is somewhat difficult to account for this increased diarrheal mortality, especially as all the agencies for the saving of infant life have been in operation perhaps more comprehensively than in any previous season. The high point for the year in the deaths from diarrheal diseases in children under five years of age occurred in the week ending Aug. 3, when these amounted to 548, while in the corresponding week of last year there were only 342 deaths from this cause. For the first time in any month of the present year no deaths from influenza were reported during August.

Obituary.

FRANCIS HARTMAN MARKOE, M.D.

Dr. Francis Hartman Markoe, one of the prominent surgeons of New York, died after an extended illness, on Sept. 13, in the fifty-second year of his age. He was a son of the late Dr. Thomas Markoe, for many years professor of surgery in the College of Physicians and Surgeons, and a distinguished practitioner in this department of medicine. He was born in New York on March 20, 1856, and was graduated from Princeton University in 1876. Three years later he received the degree of M.D. from the College of Physicians and Surgeons, New York. From 1880 to 1884 he served as assistant demonstrator in anatomy in this school, and in the three following years as demonstrator. He was then made clinical lecturer in surgery, and from 1900 had been professor of clinical surgery. Dr. Markoe was attending surgeon to the New York and St. Luke's hospitals and consulting surgeon to the New York Orthopedic Dispensary and Hospital. He was more particularly identified with St. Luke's, with which he had been connected since 1889, and at the time of his death he was dean of the surgical staff of that hospital. He was also a surgeon of the New York Fire Department, and was held in the highest esteem by the officials of that department, as well as beloved by the rank and file, for the skill and devoted attention with which he cared for injured men. Not the least of Dr. Markoe's many fine qualities were his modesty and genial sociability. He was a member of many societies and clubs, and a charter member of the Medical Association of the Greater City of New York. His only brother is Dr. James W. Markoe, the obstetrician, who is the leading surgeon of the New York Lying-In Hospital.

Current Literature.

Medical Record.
Aug. 24, 1907.

1. Robinson, B. *Landmarks in the Biliary and Pancreatic Ducts: Physiological, Anatomical and Pathological.*
2. Barlow, W. J. *Report on Two Hundred Charity Cases of Pulmonary Tuberculosis under Sanatorium Treatment at Los Angeles from 1903 to 1907.*
3. Bell, R. *Local Treatment of Cancer.*
4. Roth, H. *Perforating Gunshot Wounds of the Pleura and Lung.*
5. Ware, M. W. *The Modern Therapy of Cystitis.*
6. *Bardes, A. *Tuberculosis of the Middle Ear.*
7. Graves, W. W. *The Differential Diagnosis between Chorea Minor and Tic.*

6. Bardes says that tuberculosis of the middle ear is quite frequent, both in children and in adults. It is easily mistaken for an ordinary suppuration. In fully 65% of the children who have running ears the disease is tuberculous. Extensive destruction goes on without much pain and with few symptoms. The drum becomes ruptured and the cavity is thus drained. Often there is a fistulous opening behind the ear. The wound is unhealthy, sluggish and slow to heal. The infection occurs generally through the Eustachian tube and not by way of the external ear. It occurs when the fat pad over the mouth of the tube has been absorbed by the tuberculous process, and blowing the nose has allowed pus to be forced into the ear. Tubercle bacilli are not easily found in the discharge, being masked by the pus. Aural polyps and large granulations are rarely seen. The disease comes on insidiously, with loss of hearing and fullness in the head. In adults it is always secondary to tuberculosis in some other location. The drumhead is of a cheesy color, with numerous perforations. Much bone may be denuded. Treatment consists in general hygienic measures and stimulation of the tissues, with as little irrigation as possible.

NEW YORK MEDICAL JOURNAL.

AUG. 24, 1907.

1. KERLEY, C. G. *The Questionable Influence of So-Called Diatetic Conditions in Diseases of Throat and Nose in Children.*
2. GANT, S. G. *The Future of the Proctologist.*
3. DIEFENDORF, A. R. *Differential Diagnosis of Imbecility and Dementia Præcox.*
4. ROBINSON, B. *The Two Forms of Gastro-Duodenal Dilatation.*
5. *FRIEDENWALD, J., AND ROSENTHAL, L. J. *Absence and Marked Diminution of the Hydrochloric Acid of the Gastric Contents in Cancer Involving Organs Other than the Stomach.*
6. BEARDSLEY, J. G. *The Art of Percussion.*
7. BARACH, J. H. *Blood Pressure Studies in Typhoid Fever.*
8. BIERHOFF, F. *Police Methods for the Sanitary Control of Prostitution.*

5. Friedenwald and Rosenthal, using a Ewald test meal, examined the gastric contents of twenty-nine cases of cancer elsewhere than of the stomach. They found free HCl either absent or diminished in nineteen cases. In the other ten free HCl was in normal amount.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

AUG. 24, 1907.

1. ROTCH, T. M., AND FLOYD, C. *The Opsonic Index and the Tuberculin Test in Diagnosis and Treatment of Early Tuberculosis in Children.*
2. *CABOT, R. C. *The Diagnosis of Anemia.*
3. *MELTZER, S. J. *The Treatment of Anemia.*
4. BALDAUF, L. K. *An Investigation of the Nature of Proteid-Soap Compounds and of the Staining of Pure Fats and Lipoids by Scharlach R. and Sudan III.*
5. *STEELE, J. D. *The Method of Determining the Total Amount of the Fecal Bacteria by Weight and Its Clinical Significance.*
6. CHRISTIAN, H. A. *Diffuse Carcinoma of the Stomach, Esophagus and Duodenum.*
7. *OSBORNE, O. T. *The Diagnosis of Kidney Insufficiency and the Treatment of Uremia.*
8. MUNGER, E. E. *The Physician and the Newspaper.*
9. PATERSON, H. J. *The Operation of Gastrojejunostomy and Its Physiologic Effects.*
10. BROPHY, T. W. *Anatomy of the Palate, Normal and Cleft.*
11. NEWTON, R. C. *What Should Be the Attitude of the Profession toward the Hygiene of School Life?*
12. BRACKEN, H. M. *The State Control of Inland Waters.*
13. GOODNOUGH, X. G. *Stream Pollution and Its Prevention.*
14. MOORE, G. T. *Sewerage Purification by Septic Tank and Chemical Precipitation.*
15. BERGEY, D. H. *Factors in the Production of Coagulation Necrosis.*
16. REIK, H. O. *The Pathology of Middle Ear Suppuration.*

2. Cabot classifies the important types of anemia as follows: (1) Chlorosis; (2) pernicious anemia; (3) secondary anemia, under which come (*a*) parasitic types; (*b*) other types, such as cancer, nephritis, etc.; (4) myelophthisic anemia, a name given to anemias resulting from leukemic overgrowth of white cells in the bone marrow and causing pressure atrophy of the red cell-forming tissue of the marrow; (5) aplastic anemia, which is very rare, occurring in young girls and accompanied by purpura. The blood is like pernicious anemia, except the red cells are smaller and rarely contain nuclei. Autopsies show yellow bone marrow.

Cabot thinks that no type of anemia can be positively diagnosed by the blood examination alone. Pernicious anemia, however, can be thus recognized occasionally. The most important single fact in the blood examination of this disease is the great reduction of red corpuscles, with a relative increase in the amount of hemoglobin. It is the large cell type of anemia. The other forms of anemia belong to the small cell type and are distinguished only by etiologic factors.

3. Meltzer finds recent advance in the treatment of anemia along three lines: 1. The direct transfusion method of Crile, which is so successful in experimental acute hemorrhages and is being used with good results clinically. 2. The development of the treatment of pernicious anemia, based on the possibility that this disease is caused by an anaërobic bacillus of the intestine. Herter, who discovered the presence of this bacillus in pernicious anemia, recommends colon irrigations. 3. Inorganic iron is just as capable of being absorbed and assimilated as are the organic iron compounds of the food.

5. Steele finds that diet is the most important factor in determining the amount of bacteria in feces. Foods that are easily digested and well absorbed leave little residue and nearly always have a low bacterial count. In uncomplicated constipation, usually spoken of as atonic, fecal bacteria are decreased. This decrease of bacteria may be the causal agent. In other cases of constipation, and in cases where there is excessive bacterial growth in the stomach, bacteria in the feces are increased. In normal persons it is found that only two so-called intestinal antiseptics, salicylic acid and bismuth salicylate, apparently diminish the fecal bacteria. The other so-called intestinal antiseptics seem to increase the intestinal flora.

7. Osborne advocates the treatment of uremia by: 1. Absolute muscle rest. 2. The withholding of all food, even milk; administering very little water by mouth, even if there is no edema, as the ability of the kidneys to excrete even water is often abolished. 3. Frequent colon irrigations of hot water, leaving some in the colon for absorption if the blood pressure is low and there is no edema. 4. The administration of thyroid. 5. Hot sponging of the skin. 6. Venesection in most cases, repeated if necessary, as it has been shown that an ounce of blood removes more toxins than eight or nine times that of fluid feces or than quarts of perspiration. 7. Nitroglycerin, if the pulse tension is high. [R. I. L.]

THE EDINBURGH MEDICAL JOURNAL.

JULY, 1907.

1. GIBSON, G. A. *The Cause of the Heart Beat.*
2. THOMSON, A. *The Differentiation of Partial from Total Transverse Lesions of the Spinal Cord.*
3. GUY, W. *On the Administration of Gas and Ethyl-Chloride.*
4. WILSON, H. D. *Signs and Symptoms of Mucous Colitis.*
5. GORDON, G. A. *Observations on the Effect of Prolonged and Severe Exertion on the Blood Pressure in Healthy Athletes.*
6. MONSARRAT, K. W. *Two Cases of Renal Sarcoma in Children, with Some Remarks on the Pathology and the Recent Results of the Surgical Treatment.*

THE LANCET.

AUG. 24, 1907.

1. *WRIGHT, A. E. *A Lecture on the Principles of Vaccine Therapy.* (Concluded.)
2. *BATTLE, W. H. *A Clinical Lecture on Stricture and Traumatism of the Vermiform Appendix. With a Note on Foreign Bodies in the Appendix.*
3. MORISON, A. *An Address on the Nature and Management of Hypertrophy of the Heart.*
4. ROBSON, A. W. M., AND CAMMIDGE, P. J. *Pancreatis Due to Direct Extension of a Malignant Growth of the Gall Bladder along the Common Bile and Pancreatic Ducts.*
5. BARRY, D. T. *Calculi in the Appendix.*
6. BARNET, W. H., AND MACFIE, J. W. S. *A Case of Appendicitis Excited by a Clove, the Appendix Being the Sole Viscus in a Hernial Sac.*
7. DUKES, C. *A Record of the Physical Examination of One Thousand Boys at their Entrance on Public School Life.*
8. MUIRHEAD, W. *A Case of Typhoid Fever: A Note on the Bacteriological Examination of the Blood.*

1. See abstract of *Journal of the American Medical Association*, Aug. 10 and 17, 1907.

2. Battle maintains that there has been a real increase in appendicitis. He endeavors to find a cause. Grain now is generally ground between iron or steel rollers. Hence he suggests the possibility that small particles of

iron from these rollers may be the predisposing and sometimes the exciting cause of appendicitis. Concretions are often formed about such small particles. He relates numerous cases of small metallic bodies in the appendix. [R. I. L.]

DIE THERAPIE DER GEGENWART, No. 7. JULY, 1907.

1. POSNER, C. *The Treatment of Nervous Impotence.*
2. *MENDEL, F. *The Practical Uses of Venesection.*
3. LEWANDOWSKI, A. *Notes on Constipation.*
4. *MEISSNER, P. *Treatment of Mercurial Stomatitis.*
5. HULIS, E. *The Therapeutic Value of Histosan in Diseases of the Lungs.*

2. Mendel shows that venesection, once so much abused, has been neglected for many years, and says that there are many conditions where it is of great value. The indications for using venesection are as follows: I. Disturbances in the corpuscles of the blood: (1) Poisoning by illuminating gas. It removes the poisonous compounds formed by the gas in the blood, which do not allow the CO_2 to be thrown off and lead to asphyxiation. (2) In uremia and eclampsia it gets rid of products of the toxic metabolism which are circulating in the blood. (3) In gout, during the acute attack, the author has used bloodletting with excellent results, the patients often remaining free from attacks for long periods after the blood-letting. The single attack always clears up more quickly with venesection than without. (4) In chloroses Mendel does not agree with certain other authors that venesection is of value. II. Disturbances of circulation: (1) In cerebral apoplexy the author recommends venesection in all cases, whether the blood pressure is high or not. He has used it in cerebral hemorrhage with good effect. (2) The author strongly recommends bleeding in all cases where the right heart is overloaded and dilated, as in valvular disease and myocarditis with broken compensation and acute dilatation; also in pneumonia where the right heart is overloaded.

4. Meissner reviews the routine methods of treatment in mercurial stomatitis and says that he has had moderate success with them. Of late he has used a new preparation, formamint, with great success. It is a combination of one molecule of lactose with five molecules of formaldehyde. Five or ten of these tablets are to be dissolved in the mouth during the day. He found it not only extremely efficacious in the cure of stomatitis, but also that patients who used these tablets from the start of the mercurial treatment never showed any tendency to contract a stomatitis. [R. D.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT, No. 27. JULY 2, 1907.

1. FEHLING, H. *Infections with the Colon Bacillus in Obstetrical Practice.*
2. EINHORN, A. *An Inhalation Useful in Asthma.*
3. SUDECK, P. *The Blood Supply of the Rectum and Its Relation to Gangrene Following Operation.*
4. *BEST, F. A. *Consideration of Gastric Ulcer, with Special Reference to Spasm of the Pylorus and Hypersecretion.*
5. *ZIEGLER, O. *The Early Diagnosis of Tuberculosis of the Lungs by Means of Koch's Old Tuberculin.*
6. ISSERLIN, M. *The Diagnostic Importance of the Association of Ideas in Certain Psychopathic Conditions.*
7. POTPESCHNIG, K. *Experiments on Infant Feeding with Sterilized Human Milk.*
8. SAUER, T. *Fracture of the Spinous Processes by Muscle-Pull.*
9. KLEINBERGER, C. *Infection of the Urinary Tract by the Bacillus Pyocyaneus.*
10. RADMAN. *Therapeutic Experiments in Cerebrospinal Meningitis.*
11. MERKEL, F. *Therapeutic Notes.*
12. WEEKARD. *Causes of Ptomaine Poisoning.*
13. DURNIG. *Obituary. Theodor von Jürgensen.*

4. Best enumerates the manifold symptoms of gastric ulcer, the only sure one being hemorrhage. The pain is always an uncertain factor, ranging from the slightest sensation of irritation in the stomach to paroxysms of intense pain. Tenderness on pressure, too, may be absent or entirely misleading. Many ulcers heal without symptoms or with the lightest manifestations, depending on the situation and depth of the ulcer. The slowest ulcer to heal and that most liable to give rise to symptoms is the pyloric, for the constant opening and closing of the pylorus during digestion gives little chance for healing. After partial or complete healing of an ulcer, a new set of disturbances may arise. At each irritation of the partially healed surface a spasm of the pylorus is set up. The stagnant food in the stomach further irritates the ulcer, causing a hypersecretion. These two factors in ever-increasing quantities cause the stomach to stretch, and may call forth fresh bleeding from the ulcer. This condition may clear up, spontaneously or under treatment, or it may stay latent for weeks or months. The stomach contents are colorless, cloudy, bile or blood-stained, usually containing small particles of carbohydrate food. The percentage of free HCl is usually increased, but may be below normal. A considerable tumor is often palpable over such a pylorus and may lead to error in diagnosis. Motor insufficiency and dilatation are the end results of this condition. Medical treatment often improves the condition but never results in a permanent cure, whereas the results of surgery in uncomplicated cases of pyloric stenosis and spasm of the pylorus have been most satisfactory. About half the author's cases of spasm of the pylorus were air swallowers, which makes treatment, both medical and surgical, much less likely to succeed.

5. In order that the early diagnosis of tuberculosis of the lungs by the tuberculin test be successful, every step in the routine should be most carefully carried out. The presence of fever is a contra-indication, and the test should not be applied in case of recent hemorrhage until four weeks after the bleeding. The patient must be put to bed and the temperature taken at two-hourly intervals, beginning at 6 A.M. the day before the injection is given. Ziegler recommends the rectal temperature. When sputum is present, the twenty-four-hour amount should be measured. A careful record of the condition of lungs, larynx, abdomen and urine should be made before the injection. The next day, at 9 A.M., 0.1 mgm. of Koch's old tuberculin is injected. If a rise of 0.5° C. in temperature is noted, the reaction is considered as positive. To confirm this a second injection of 0.1 mgm. tuberculin is given forty-eight hours later. If no reaction is noted, 0.4 mgm. is injected forty-eight hours after the first dose. The lungs should be watched for the appearance or increase in number of râles; the larynx for pain; the abdomen for tenderness on pressure over the kidneys or ileocecal region. This abdominal tenderness, however, may not be due to a tuberculous process. Pain and tenderness over the sternum are fairly common in a positive reaction, due, the author thinks, to local reaction in the intrathoracic lymph glands. Palpitation of the heart has been seen, due to local reaction in the glands of the neck, causing swelling and pressure on the vagus. Occasionally there occur extremely high temperatures, or the febrile period may be protracted four or five days. The usual length of the reaction period is twelve to twenty-four hours. The local reactions in lungs and elsewhere usually last from four to seven days. The author appends an account of his technique of preparing tuberculin for injection. [R. D.]

No. 28. JULY 9, 1907.

1. SCHULTZE, F. *The Diagnosis and Operative Treatment of Meningeal Tumors of the Spinal Cord.*
2. *SCHÜFFNER, W. *The Spirocheta Pertennis and the Clinical Picture of Frambesia Tropica.*
3. HENKEL, M. *The Indications for and the Technic of Pubiotomy.*
4. BREZINA, E. *Studies on the Combination of the Antibody.*
5. SOCTBUR, F. *The Excretion of "Endogenous" Uric Acid in Gout.*
6. SCHAEFFER, F. *Remarks on Dr. A. Eichorn's Inhalation Remedy in Asthma.*
7. LÄNGEMARK. *The Treatment of Dupuytren's Contraction with Thiosinamin.*

8. WICHMAN, P. *Experiments on the Action on the Deeper Tissues of the Skin of the Finsen Ray and the Quartz Lamp.*
9. SCHLÆGER. *Treatment of Seasickness by Bier's Hyperemia.*
10. HIPPEL, E., AND PAGENSTECHER, H. *The Influence of Cholin and the Rœntgen Ray on Pregnancy.*
11. TRENDELENBURG, W., AND BUMKE, O. *The Relation between the Medulla and the Pupil.*
12. ROESLE, E. *A Statistical Survey of the Health Conditions in the German Colonies.*

2. Schüffner, while in Sumatra, had opportunity to observe 129 cases of frambesia occurring in natives. In 81% of the cases he was able to confirm Castellani's observations, by finding the spirocheta pertennis in both smears from the skin lesions and in sections. The spirochetæ of syphilis and frambesia are very similar, but slight differences exist. The spirocheta pertennis is found in the rete Malpighi, in the necrotic tissue of miliary abscesses and along the lymph spaces; whereas the spirocheta pallida lies mostly along the course of the blood vessels in the perivascular tissues. The spirals numbered from 8 to 16. That the spirocheta pertennis is the etiological factor of frambesia the author thinks is undoubted, arguing from the likeness between syphilis and frambesia, which is very marked. Frambesia, though very closely allied to syphilis, is, however, a distinct condition. It is an infectious disease, beginning with a primary lesion, usually in a wound or excoriation. From four to twelve weeks later there comes a general papular eruption, the papules looking like raspberries when cleared of the surrounding crusts. Only rarely is a roseola present. The mucous membranes are never affected. Chronic periostitis is very common, especially in children. The treatment is anti-syphilitic, under which the condition rapidly clears up. [R. D.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, No. 28. JULY 11, 1907.

1. *GOLDSCHEIDER. *Very Light (Schwellenswert) Percussion of the Heart.*
2. *FRIEDLANDER, J., AND v. MEYER, E. *A Contribution to Rose's Head-Tetanus.*
3. KAREWSKI, F. *Rupture of the Quadriceps Femoris.*
4. BÖCKER, W. *Paralytic Luxations of the Hip Joint.* (Continued.)
5. KEIMER. *Acute Osteomyelitis of the Flat Bones of the Skull.*
6. *NEUHÄUSER, H. *Hemorrhage after Nephrolithotomy.*
7. *SCHERBER, G. *Etiology of Necrotic Forms of Stomatitis with Cases.*
8. BOSSE, B. *The Present View of Lumbar Anesthesia.* (Concluded.)

1. Goldscheider thinks his method of light percussion gives extremely accurate information as to the heart borders. It has been proved by different observers to give borders in accordance with the x-ray pictures. He claims that the credit of applying this method to the heart belongs to him and not to Ewald, who used it on air-containing organs. If, instead of the finger as a plexmeter, a short glass cylinder with the end covered with rubber is used, greater sharpness in tone is obtained and more accurate borders can be outlined. Great care must be used to have the plexmeter parallel to the organ whose borders are being demonstrated.

2. Friedlander and v. Meyer describe a case in which, following a wound on the head, the tetanus involved only the muscles of the face on the side of the injury, with paralysis of the facial nerve on that side. Nineteen days after the injury the patient died, after developing spasm of the muscles of deglutition. There was at no time any involvement of the muscles of the extremities or back and only the slightest in those of the neck. The occurrence of local tetanus is explained with difficulty. Perhaps the tetanus toxin is carried to the spinal cord along the nerves which are adjacent to the point of infection, and there sets up at first an irritation only of those cells of the anterior horn, which are nearest the point of entrance of the poison. In human beings, however, especially in fatal cases, the poison appears usually to diffuse so rapidly that, as a rule, not local but general tetanus is a result. This case is interesting in the contrast between the intensity of the infection and its limited extension, involving only a few muscles, yet causing death in nineteen days.

6. Neuhauser reports that in Israel's clinic in Berlin, among 131 cases of nephrolithotomy, a threatening hemorrhage occurred 12 times or in 9%. The onset and course of these hemorrhages divide them into two types. First, those in which the bleeding begins with the operation and persists days and even weeks without being extreme, so that the patient gradually becomes exsanguinated. The second type is that of late bleeding. During an apparently uninterrupted recovery, suddenly an acute hemorrhage occurs from the operated kidney. Constitutional diatheses, as hemophilia, are the chief causes of the first type, while the origin of the second is often hard to find; dislodged thrombi in the renal vessels may, perhaps, explain some cases. Adrenalin, gelatin, ergotin, etc., alone are not of much use. In severe cases packing is the only treatment of avail.

7. Scherber concludes that all necrotic forms of stomatitis, however different their clinical picture, develop as bacterial infections upon some injury to the mucous membrane of the mouth. This diminishes the natural protective substances in the secretions, so that extensive and deep ulcerating and necrotic processes are formed. Painting with strong hydrogen peroxide, with a dilute mouth wash of the same, is the best treatment, its action being especially strong against the anaërobic bacteria.

[L. G. M.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 26. JULY 1, 1907.

1. BURCK, C. *The Biologic Differences between Races of Apes and of Men, as Shown by Specific Blood Reactions.*
2. *SPIELMEYER. *Atoxyl in Paralyses.*
3. MORSE, M. *A Study of Certain Cases of Pernicious Anemia.*
4. SCHÜTZE, A. *A Broader Application of the Method of Complement Fixation.*
5. *SELIG, A. *Clinical Observations on the Use of the Electric Vibrator in the Treatment of Heart Disease.*
6. *GOLDSCHMIDT. *The Use of Morphine in Asthma.*
7. *LEUFTLEBEN. *The Origin of Heat Stroke.* (Concluded.)
8. KRAUS, F., AND NICOLAI, G. F. *The Electro-cardiogram in Pathologic and Normal Conditions.* (Concluded.)
9. BEITZKE, H. *A Review of Wright's Opsonin Theory.*

2. It is claimed that atoxyl is a powerful agent in the treatment of para-syphilitic conditions. Spielmeyer has given the drug a careful trial in sixteen cases of marked late syphilis and para-syphilitic conditions, without either improvement or arrest of the process. Given early, atoxyl might succeed in warding off such conditions. When the process is under way it is apparently useless.

5. Selig has tried the effect of the electric vibrator in many cases, cardiac and otherwise. In cases without cardiac lesion no diminution in the heart area was demonstrable. In all cases of heart disease with broken compensation, the orthodiagram showed a greater or lesser diminution in the size of the heart, with a slowing of the pulse and great relief of symptoms, due probably to stronger contractions of the heart muscle under the stimulus of the vibration. It is applied over the precordia or between the shoulder blades for between five and ten minutes daily. The author concludes that this method is a valuable adjunct to the treatment of organic disease of the heart.

6. Goldschmidt divides all asthma cases into three classes: (1) Acute or typical attack coming periodically and lasting a few hours. (2) Asthma chronica, wherein the patient has a series of recurrent attacks for three or four months at a time, followed by a period of absence of attacks. (3) Asthma permanens, wherein the patients have the asthmatic type of breathing for years without actual paroxysms, but are always very uncomfortable. In the first class the use of morphine subcutaneously is to be recommended, without danger of forming a habit. In the second and third kinds of cases morphine is of great value, and when rightly used causes no harmful results. It is to be administered in very small doses subcutaneously,

i. e., 2 to 5 mgm. ($\frac{1}{30}$ to $\frac{1}{13}$ gr.). Such small doses generally suffice to allay distress and are perfectly safe as long as no symptoms of morphinism appear. When, however, the original dose does not suffice to produce the desired effect, morphinism is present and the use of the drug must be abandoned.

7. Leuftleben has made many observations on a large series of cases of heat stroke, both mild and severe, at the maneuvers of the German army. These cases occur in healthy and strong young soldiers in whom all other diseases are ruled out by medical examination. They are, therefore, cases of uncomplicated heat stroke. The author found that the red cells of the blood showed a great loss of hemoglobin. Most of the protoplasm of the leucocytes was destroyed, the nuclei only being left in the stained specimen. The blood serum was always tinged yellow. Autopsies on the fatal cases showed an overloading of the venous circulation, especially heart, lungs and brain, with here and there ecchymoses of the serous surfaces. The blood is dark red and thrombi are found in the right heart and in the capillaries of the lungs and brain. The suddenness of these attacks and the conditions constant in the blood and at autopsy point to a rapid, severe intoxication. Experiments have shown that sudden removal of large amounts of blood from the tissues of animals causes a loss of the hemoglobin from the red cells. The hemoglobin circulating in the blood breaks up the leucocytes, setting free the fibrin ferment, leading to a clotting of blood in the capillaries and a damming of the blood into the venous circulation. The author carried out a series of experiments on rabbits by injections of fresh extracts of hemoglobin. The symptoms and post-mortem findings, as well as the blood conditions, corresponded almost exactly with those in heat stroke. After a comparison of these findings he concludes that heat stroke is an auto-intoxication due to a sudden pouring out of hemoglobin into the blood stream. In prophylaxis the author lays stress on the regular drinking of water by those who are taking violent exercise in the hot sun. Treatment of heat stroke should be subcutaneous injection of salt solution preceded by free bleeding, which should save lives except in the most marked cases. [R. D.]

DEUTSCHE ZEITSCHRIFT FÜR CHIRURGIE, BAND 88, HFT. 1–3.

MAY, 1907.

1. *KÖNIG, F. *The Use of Prostheses after Exarticulation and Resection of the Lower Jaw.*
2. HOLLAND, J. F. *Tuberculous Tumor of the Sigmoid Flexure.*
3. *VORSCHÜTZ. *Hyperalgetic Zones in Cases of Injury of Skull and Brain.*
4. *WOLFF. *Statistics of Lung Complications following Surgical Operations.*
5. SCHLAGINTWEIT. *Subcutaneous Dislocation of the Ankle.*
6. *DRAUDT. *Resection of the Vena Cava in a Case of Mixed Tumor of the Renal Capsule.*
7. FRANGENHEIM. *Gummous Ostitis with Spontaneous Fracture.*
8. *KUDLEK. *A Contribution to the Pathology and Physiology of the Patella.*
9. *ISELIN. *Injury of the Diaphragm and Diaphragmatic Hernia.*
10. *OFFERGELD. *Ligation of the Large Vessels of the Lower Abdomen.*
11. LEXER. *Chondromata of Joints.*
12. EICHEL. *Dislocation of the Scaphoid Bone of the Foot.*
13. BLECHER. *Dislocation of All Three Cuneiform Bones.*

1. König discusses the various methods of preserving the shape and function of the lower jaw after removal of a portion of it. A temporary prosthetic apparatus is used, followed later, when the wound has healed, by a permanent one. The aid of a good dentist in adjusting the appliances is imperative. The experience of many of the German and Austrian clinics in this matter is given, the weight of opinions being in favor of the immediate India-rubber apparatus of Martin or the "inclined plane" contrivance of Sauer, followed later by a definite splint which can be removed and cleaned daily.

3. Vorschütz reports twelve cases in which areas of hyperesthesia of the scalp and neck accompanied injury to skull and brain. The presence of such zones indicates injury to the cranial contents. They are known to persist occasionally for two to three years after the injury and are thus of importance in forming an opinion for accident insurance companies. Such hyperalgetic areas are not usually present in cases of skull fracture with concussion, but are most often found in cases of gross cerebral contusion.

4. The results of four years' experience with anesthesia, in 3,082 operations at the clinic of Lexer, are reported. Ether, used in 1,806 operations, caused lung complications in 3.2%. Ether and chloroform (Billroth's mixture, etc.) used 744 times caused complications in 4.6%. Chloroform, used 532 times, gave the best figures, namely, 1.9%. Both local and lumbar anesthesia are also occasionally followed by lung complications.

6. During the removal of a large mixed tumor of the kidney capsule, Lexer was compelled to ligate and resect the inferior vena cava. Recovery took place without disturbance of the circulation, the child dying a half year later of recurrence. Draudt has found six similar cases in the literature. From these and from several series of experiments, it is shown that ligation of the cava, if it be done below the entrance of the renal veins, is seldom followed by any pathological disturbance other than transient edema of the extremities. Ligature above these veins is usually followed by death from renal disturbance through insufficient venous anastomoses.

8. Kudlek reports a case of giant-celled sarcoma of the patella which necessitated the removal of this bone. Two years later there were no signs of recurrence and the function of the joint was perfect.

9. Iselin reviews diaphragmatic wounds and herniæ. In every case of incised wound of the lower thoracic region one must consider the possibility of injury to the diaphragm. Prolapse of omentum through the wound confirms the diagnosis. Such wounds should always be sutured after access has been gained, either by enlarging the original opening or by resection of ribs. The resulting pneumothorax usually disappears in about eight days. Inflammatory lung complications are rare, and the pleural cavity can be closed without drainage in simple cases. If the reposition of prolapsed abdominal contents is difficult, the rent in the diaphragm should be enlarged. Through this opening the abdominal organs should be carefully inspected, and if found injured a laparotomy should also be done. Rupture of the diaphragm is about as frequent as are incised wounds. It occurs as a result of compression, either of thorax or abdomen, of a severity sufficient to alter the shape of the thorax or to increase the intra-abdominal pressure suddenly. Since liver, spleen, and kidney are frequently injured at the same time, approach by the abdominal route is the best. The diagnosis of a chronic hernia of the diaphragm containing stomach is usually possible. The x-ray is of great aid in this connection. The presence of large intestine in the hernia cannot be made out, as a rule, till laparotomy is done for intestinal obstruction.

10. The successful ligation of any of the large vessels of the lower half of the body is primarily dependent on the ability of the heart to overcome the sudden increase in blood pressure. Ligation of the aorta increases the pressure so greatly that, as a rule, the cardiac power is insufficient, and death ensues. Bilateral ligature of the common iliacs causes the same phenomena as that of the aorta. Unilateral ligature is only slightly dangerous, however, the blood pressure in the femoral returning to nearly normal in twenty-four hours. Bilateral closure of the internal iliacs, as also of the external iliacs extraperitoneally, is without danger. Ligation of the femoral artery is followed by gangrene of the leg in 60% of the cases. Closure of the femoral and of the external and internal iliac veins is harmless, as is also ligation of the cava below the renal veins. [W. C. Q.]

Experimental Cirrhosis of the Liver with a Tubercular Basis. STOERK (*Wien. klin. Wochenschr., No. 28*) finds that in guinea pigs infected with tuberculosis the liver shows very constantly cirrhotic changes which in mor-

phology resemble exactly the histological picture of human liver cirrhosis. The primary specific lesion starts in the acini in the portal vein ramifications, and from here extends into the neighboring peripheral parts of the parenchyma. Destructive and proliferative processes ocurring side by side are very characteristic, *i. e.*, destruction of liver cells synchronously with the formation of young connective tissue and regeneration in the biliary passages. Bartel, in an article in the same issue, finds results analogous to Stoerk's, viz., chronic inflammatory processes in other organs in the course of tubercular infections, which are characterized by a combination of regressive and progressive tissue changes. These changes are found most marked in the lymph glands and in the lungs. Jagie also, in the same number, reports a case of chronic tuberculosis of the left pleura and peritoneum in a woman forty-five years old, with macroscopic and microscopic beginning liver cirrhosis. This patient was not a drinker and was never jaundiced. [L. G. M.]

Miscellany.

TYPHOID FEVER EPIDEMIC AT NEW JERSEY STATE HOSPITAL.

THE following official statement has been made of the recent epidemic of typhoid fever at the state hospital, at Trenton, to the New Jersey State Board of Health:

Twenty-eight days have now elapsed since a new case of typhoid fever has been reported from the State Hospital, Trenton, and we may therefore conclude that the epidemic which recently prevailed in that institution has finally ceased.

To review briefly the important facts having relation to this outbreak it may be stated that the first case occurred April 8, 1907, in the person of an inmate of the hospital, located in the west wing of the building, who probably contracted the disease in the city of Trenton. Subsequent cases occurred in the same wing, and up to Aug. 13, 80 cases had appeared in the hospital with 16 deaths. All of these cases were located in the main build ng of the institution and no cases occurred in the Annex, notwithstanding that more than 400 of the inmates of the institution are cared for in that building. Twenty-three employees and other residents in dwellings on the hospital premises were affected with the disease. Investigations concerning the food supply, including milk and water, were negative, except that colon bacilli were found in the water of the spring from which a portion of the water provided for the hospital premises was obtained. Suspicion was at first directed to the water of this spring as the medium through which the infection was spread, but in the light of later developments it now appears improbable that the spring water had any influence whatever in conveying the infection, and we are led to the final conclusion that the disease was transmitted directly from patient to patient and through the agency of utensils and food infected within the building.

This conclusion is justified for the following reasons:

(1) The disease first appeared in the west wing of the main building and spread to other inmates in this wing, and as facilities were not provided for the isolation of convalescents the infection was communicable by them to other susceptible inmates.

(2) The spoons, forks, cups, etc., used in the dining rooms were washed by the insane inmates without boiling, and in the course of the epidemic every utensil in the building probably became infected, thereby exposing the food which entered the building to infection as soon as it was received.

(3) The filthy habits of many of the insane inmates of the hospital probably caused infected discharges to be generally distributed in the bathroom, upon the furniture, door knobs and other surfaces touched by the hands of the infected persons.

(4) From the west wing the infection was carried to other portions of the main building, but, as above stated, not a single case occurred in the Annex, indicating that the infection was not conveyed by milk or water, for the supply of both of these articles was from the same sources for both buildings. The water supply for all of the buildings on the hospital premises was taken from the same piping system, and in the standpipe, located near the Annex, the water which was pumped into the mains from the spring and from the wells was undoubtedly often thoroughly mixed before distribution to the various branches and service lines.

(5) Inquiry has shown that communication between the infected kitchens of the main building and the dwellings of employees, where cases of typhoid fever occurred, was frequent.

Correspondence.

LETTER FROM PARIS.

CALMETTE'S OPHTHALMO-REACTION TO TUBERCULIN.

[From our Special Correspondent.]

PARIS, Aug. 30, 1907.

Mr. Editor: During the past three months the vexed question of the value of tuberculin, as a means of *diagnosis* at least, appears to have taken a decided step in advance, — and this by the very simple process of the method's having been reduced from a general one, that affected the entire economy by the introduction of toxins into the blood circulation, to a purely *local* application without vascular effraction, by depositing the virus on a convenient and visible mucous membrane, the conjunctiva. It will be seen that the modification was not a very complicated one, — *mais encore, fallait-il y penser?*

The merit of this improvement is due to Calmette, of the Pasteur Institute of Lille, who has demonstrated that when one drop of a weak solution of tuberculin is introduced into the eye of a patient suffering from any tubercular process, medical or surgical, the conjunctiva reacts in such a characteristic way that the diagnosis of tuberculosis can be safely made, even when nothing of the sort had been suspected in the patient. You will observe at a glance that if his contention proves to be accurate, this is a step in advance in medicine of no minor importance. He calls it the *ophthalmo-reaction to tuberculin.*

I said that the tuberculin question "appears" to have made a great stride forward. For in matters of tuberculosis one can hardly be too circumspect: the subject is of such vast importance to the civilized races, to whom the tubercular processes are *the* enemy, and our hopes in this field have now been raised so many times by the laboratory men, their promises ultimately vanishing and leaving nothing but thin smoke and ashes behind them.

At the present moment, as regards this new test, we

are in the first heyday of our enthusiasm, and everything is *couleur de rose;* the dark side, which appears inevitable in every tableau, has not yet begun to show up. It is a French discovery, so the French have naturally taken it up vigorously and are investigating it on a large scale and as quickly as feasible. Its sponsors are first rate men, who leave nothing to be desired as regards reliability: Calmette, Letulle, Comby, Bazy, and others; and all of their accounts agree so far, so that in writing to you about it I hope that the reasons are adequate to warrant my suggesting that you should in your turn verify these results.

I need not take up the knotty question of tuberculin in general. It has been before the medical world for over fifteen years, has been the object of an almost incalculable amount of work and experimentation on the part of the very best of men; and yet it has so far resulted in what can fairly be claimed as little better than chaos, and a species of chaos that is particularly trying, a condition of affairs in which the seeker after guidance is utterly staggered by seeing good men, in whom he has equal confidence, asserting that a thing is at the same time both black and white, which cannot be.

Leaving all this uncertainty and disappointment aside, it will be seen that Calmette's idea is of a different order. He has taken one limited portion of the tuberculin question and made a definite assertion about it; it is one that can be readily tested by everybody, and we shall soon know beyond peradventure whether he is right or wrong.

Von Pirket, of Vienna, took the first step in bringing the use of tuberculin as a means of diagnosis down from a general to a local method, by proposing that instead of using it hypodermically it should be applied to a small scarified wound on the skin, when, if the patient were tubercular, the inoculation would be followed by marked local inflammatory reaction with the formation of a vesico-pustula, whereas if the patient were sound no reaction whatever would occur.

The veterinary surgeons Vallée and Arloing next observed that von Pirket's method holds equally good with animals.

This mode of procedure certainly seems preferable to the hypodermic one; but still, there is vascular effraction even here. Some of the tuberculin must be absorbed, and might give rise to disasters such as occurred with the original Koch's injection. Calmette's improvement, which is as follows, is evidently superior to von Pirket's, and would appear to be, so far as we now know, above criticism.

In order to avoid the irritating action of glycerin on the conjunctiva, Calmette uses only dry tuberculin precipated by alcohol (95%), sterilized by moist heat (not exceeding 105°), and dissolved in sterilized distilled water. The solution imployed is .01, freshly prepared, and strictly sterile. A good method is to prepare it extemporaneously by dissolving 5 mgm. of dry precipitated tuberculin in 10 drops of warm boiled water. With each patient, then, one drop is let fall into the inner angle of one eye, the lids being held apart to guard against any involuntary wink, which would eject the instillation at once. Patients must be cautioned not to rub the eye treated; and naturally the method must not be used in any eye already the seat of some disorder. This mode of procedure always suffices to produce the reaction in suitable conditions.

Five hours after the instillation, sometimes even in three, every tubercular patient shows very evident congestion of the palpebral conjunctiva, which becomes bright red, with more or less intense edema. The caruncula swells, reddens and is observed to be covered with a light fibrinous exudate.

This vascular injection increases progressively and is attended with epiphora. In six hours the fibrinous secretion has become more abundant, and collects in filaments in the lower conjunctival *cul-de-sac*.

The reaction attains its maximum in from six to ten hours. The patients feel no pain, only a little discomfort, with slight sensation of burning, and of deranged vision owing to the abundance of the exudate. There is no chemosis. Rectal temperature is not influenced. The patient's general condition and appetite remain excellent. The tubercular lesions are not modified in any way, the entire process being confined to the local area. It is easy to estimate the intensity of the reaction by comparison with the other eye.

The signs of congestion lessen and then disappear in eighteen hours with children, and in from twenty-four to thirty-six hours with adults. In no case has the instillation left any ill effects after it in the eye treated. When the test is to be repeated a second time, the other eye should be used, or else the original eye, but with a week's respite.

With healthy persons, and with persons suffering from non-tubercular complaints, this instillation of tuberculin between the lids produces no reaction, or at the most a slight redness at the end of one and a half to three hours, which soon disappears and is accompanied neither by fibrinous secretion nor by epiphora.

In some few cases the appearance of the reaction is retarded; it then begins in from twelve to twenty-four hours, and terminates in about seventy-two.

There appears to be no relation whatever between the intensity of the reaction and the gravity of the tubercular lesions. A discrete case of tubercular glands may give a more marked result than an extensive and advanced case of pulmonary trouble. The very few tubercular cases that have failed to react to this test have been patients on the point of death with whom all power of reaction was exhausted.

Comby has found that with children the .01 solution may produce an excessive reaction; he therefore advises in preference a solution of 1. to 200.

Such then are the details, as so far worked out, of this new and interesting test. Among them the following appear to be the most salient.

The simplicity of the method is all that could possibly be desired; it seems to be well within the powers of every practitioner, requiring no laboratory help of any kind. Furthermore its results are rapid; twenty-four hours suffice for a diagnosis. Its certainty, again, is claimed to be absolute. As regards this point, however, it will be well to remain on a prudent reserve; the idea of *certainty* seems rather to clash when used in relation to things medical.

Its innocuity has so far been found to be complete, as well in the case of children as with adults; neither in a general nor in a local sense has it produced any ill effects, although it has now been used in over 1,000 cases, and that is a figure that begins to count.

The fact must always be borne in mind that this test only acts when there are lesions *in process of evolution*, when some active focus exists; if then a patient fails to react, this does not mean that he never *has been* tubercular. One of its great services should be to show that a tubercular lesion is definitely cured.

But when the method will triumph will be in the *obscure* cases, and, above all, as a help toward an *early diagnosis!* and therein lies the key to success with these patients, as I need not tell *you!* If the method holds its promises, and enables the practitioner, struggling with a subjective diagnosis of incipient phthisis before objective disturbance is discernible, to affirm at the end of twenty-four hours and without possible risk of harm, "This is tuberculosis; the patient must resign present occupations and take to the hills," it seems difficult to overestimate the practical value of what will then prove to have been Calmette's idea of genius.

"Spectator."

"THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS FOR THE GENERAL PRACTITIONER."[1]

New York, Sept. 13, 1907.

Mr. Editor: I should have been more completely satisfied with Dr. Edward O. Otis's very instructive article if he had said even a few words in regard to the condition of the larynx in the earlier days of pulmonary tuberculosis.

Hyperesthesia, anemia, impaired movement of the vocal cords, tumefaction, and even ulceration of the larynx, will sometimes fix a diagnosis of pulmonary tuberculosis when physical signs in the lungs are negative, or doubtful. I take it that every general practitioner should know these facts.

Beverley Robinson, M.D

[1] Bost. Med. & Surg. Jour., Sept. 12, 1907, p. 361.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPT. 7, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	14	8
Chicago	—	—	Waltham	8	2
Philadelphia	—	—	Pittsfield	5	3
St. Louis	—	—	Gloucester	8	4
Baltimore	220	102	Brookline	3	1
Cleveland	—	—	North Adams	7	2
Buffalo	—	—	Chicopee	9	5
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	10	3
Milwaukee	—	—	Beverly	—	—
Washington	—	—	Leominster	5	2
Providence	71	20	Hyde Park	2	—
Boston	232	106	Melrose	7	0
Worcester	37	60	Newburyport	—	—
Fall River	67	44	Woburn	6	3
Cambridge	26	13	Marlboro	5	1
Lowell	32	16	Westfield	5	2
Lynn	20	7	Peabody	—	—
New Bedford	48	23	Revere	6	4
Springfield	22	8	Attleboro	3	2
Lawrence	27	17	Clinton	5	2
Somerville	13	3	Adams	6	—
Holyoke	19	9	Gardner	—	—
Brockton	13	4	Milford	—	—
Malden	10	4	Watertown	1	1
Chelsea	11	6	Plymouth	—	—
Salem	21	9	Weymouth	4	1
Newton	6	—	Framingham	4	2
Haverhill	8	1	Southbridge	3	2
Fitchburg	—	—	Wakefield	—	—
Everett	7	5	Webster	—	—
Taunton	15	5			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED SEPT. 4, 1907.

WHITE, J. H., surgeon. Granted leave of absence for one month from Aug. 29, 1907. Sept. 4, 1907.

SWEET, E. A., assistant surgeon. Directed to proceed to El Paso, Tex., for special temporary duty, on completion of which to rejoin his station at Fort Stanton, N. Mex. Aug. 28, 1907.

ASHFORD, F. A., assistant surgeon. Granted leave of absence for seven days from Sept. 6, 1907. Sept. 4, 1907.

TAPPAN, J. W., acting assistant surgeon. Directed to proceed along Mexican border from Brownsville, Tex., to Nogales, Ariz., upon special temporary duty, upon completion of which to rejoin his station at El Paso, Tex. Aug. 28, 1907.

SEIDELL, A., technical assistant. Detailed to represent the Service at the fifty-fifth annual meeting of the American Pharmaceutical Association in New York City, Sept. 2–7, 1907. Aug. 30, 1907.

GOODMAN, F. S., pharmacist. Excused from duty for a period of ten days from Sept. 3, 1907, without pay. Aug. 31, 1907.

SCOTT, E. B., pharmacist. Relieved from duty at Norfolk, Va., and directed to report at the Bureau, Washington, D. C., for temporary duty. Aug. 31, 1907.

MEGAW, H., pharmacist. Directed to proceed to Vineyard Haven, Mass., for temporary duty, upon completion of which to rejoin station at Boston, Mass. Aug. 30, 1907.

CASUALTY.

Acting Assistant Surgeon A. C. Blain died at Brunswick, Ga., Aug. 28, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING SEPT. 14, 1907.

A. F. PRICE, medical director. Detached from duty as member of the Naval Retiring Board, Washington, D. C., and ordered to continue other duties.

F. M. GUNNELL, medical director. Retired, detached from duty as senior member of the Naval Examining and Medical Examining Boards, Washington, D. C., and ordered home.

T. D. MYERS, passed assistant surgeon. Retired, detached from duty in connection with the Naval Medical School, Washington, D. C., and ordered home.

A. M. FAUNTLEROY, passed assistant surgeon. Detached from the Naval Station, Tutuila, Samoa, and ordered to the Naval Hospital, Mare Island, Cal.

P. S. ROSSITER, passed assistant surgeon. Detached from the Naval Academy, and ordered to the Naval Station, Tutuila, Samoa.

F. P. W. HOUGH, acting assistant surgeon. Detached from the Naval Hospital, Annapolis, Md., and ordered to Washington, D. C., Sept. 16, 1907, for examination for appointment as assistant surgeon in the Navy, and then to wait orders.

J. C. CLAYTON, acting assistant surgeon. Appointed acting assistant surgeon from Sept. 5, 1907.

E. E. CURTIS, assistant surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the "Culgoa."

H. WELLS, medical director. Detached from command of the Naval Hospital, Boston, Mass., and granted sick leave for three months.

R. J. STRAETEN, assistant surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to instruction at the Naval Medical School, Washington, D. C., Sept. 30.

F. H. STIBBENS, assistant surgeon. Detached from the Naval Training Station, Newport, R. I., Sept. 22, and ordered to instruction at the Naval Medical School, Washington, D. C., Sept. 30.

APPOINTMENTS.

FRANK P. KNOWLTON, A.M., M.D., at present Associate Professor of Physiology in the College of Medicine, Syracuse University, has been advanced to the head of the Department of Physiology. A competent laboratory assistant to the Chair of Physiology will be selected at the earliest possible moment.

HAROLD DICKENSON SENIOR, M.B., F.R.C.S., at present an Associate in Anatomy at the Wistar Institute of Anatomy, Philadelphia, has been elected to the Chair of Anatomy and as Director of the Anatomical Laboratory at Syracuse University, to take the place formerly held by Dr. George M. Price. Dr. Senior was educated in England at Durham University. He was first Assistant Demonstrator of Anatomy at Durham University, then Junior Demonstrator of Anatomy at Charing Cross Hospital Medical School, London.

GUSTAVE M. MEYER, B.S., Sc.D., for four years Assistant to the Chair of Physiological Chemistry at Columbia University, New York, has been elected to the Chair of Physiological Chemistry in the Medical College of Syracuse University. Dr. Meyer received his degree of Sc.D., at the University of Geneva, Switzerland.

RECENT DEATHS.

CHARLES FRANKLIN BRAUCH, M.D., M.M.S.S., died in Amherst, Aug. 27, 1907, aged sixty-one years.

DR. LESTER S. HILL, of Providence, R. I., died recently as the result of an accident at the age of sixty-four. Dr. Hill was graduated from the Medical Department of New York University in 1872. At the time of his death he was assistant surgeon-general of the Rhode Island National Guard. His interest in military matters dated from the Civil War in which he had a brilliant record, finally being mustered out with the rank of colonel.

DR. SAMUEL LEWENGOOD, of New York, died suddenly on Sept. 10, at the age of forty-five years. He was graduated from Bellevue Hospital Medical College in 1882, and had spent all his professional life in New York City.

DR. JOHN H. SWASEY, of New York, died on Sept. 12, while visiting in Portland, Me., where his family came from. He was graduated from the College of Physicians and Surgeons, New York, in 1875, and devoted his attention largely to pathological studies.

DR. A. WARNER SHEPARD, of Brooklyn, N. Y., died suddenly from cardiac disease on Sept. 7, at his summer residence at Fort Hamilton, on the Narrows. He was seventy-five years of age, and was graduated from the Long Island College Hospital in 1886. For many years he was county physician of Kings County, and it is stated that he had the record of having performed more autopsies than any other physician in the State of New York. He was a native of Nashua, N. H.

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Address.

PULMONARY TUBERCULOSIS AND THE RÖNTGEN RAYS.*

BY PERCY BROWN, M.D., BOSTON,
Instructor in Rœntgenology, Graduate Department of Harvard Medical School.

WHO of us, after hearing Dr. Alleyne Adams's stimulating discourse before The Massachusetts Medical Society, a few weeks ago, did not leave his seat with a renewed and deepened sense of his responsibilities as a practitioner of medicine? That these responsibilities are imminent and immediate we felt intuitively, and they are devolved upon us as combatants in the great war which, as Dr. Adams said, is now before us.

In the midst of rumblings of internal strife in eastern Europe and the sight of thunderheads rising over the Pacific, our attention must not be diverted from this silent war — a war of far greater importance than any international contention, a war making wholly for good, a war in which lives are not to be lost, but saved. We are engaged in the strife, not as volunteers, but as conscripts drafted into service by the demands of progressive medicine, and he who fails to perform his share of duty must suffer from the stingings of conscience if not from open dishonor at the hands of his compeers.

The success of an army is dependent naturally upon the efficiency of its armament, and we fail of our purpose if we do not employ, of our own initiative, the arms given us to use. A powerful weapon Doctor Adams has described, to wit, the segregation of consumptives, and it is your duty, as clinicians, to make good use of it. Laennec and Koch are but two among many armorers who have contributed to our accoutrements, and it is to describe the use of the weapon furnished by another of these, Röntgen, that he who addresses you appears before you to-day.

The application of the Röntgen rays in the diagnosis of pulmonary conditions cannot be described as new, for as early as the year immediately following Röntgen's announcement, practical use of them was made for this purpose. Among European observers, Bouchard,[1] Bergonié,[2] Beclere,[3] Oudin;[4] and Fernet,[5] Levy-Dorn,[6] Loewenthal,[7] Grunmach,[8] and Holzknecht[9] published accounts of their work in 1897 or prior thereto. Above all, either in this country or Europe, stands the work of Williams,[10] of Boston, which possesses such accuracy in executive detail and such soundness of drawn conclusions that it will ever be a classic in the röntgenological field. Later, valuable additions were made by Claude[11] in France, by von Ziemssen and Rieder[12] in Germany, and by Pfahler[13] and Hickey[14] in this country. Rieder,[15] by introducing new refinements in technic, proved the skiagraphic record of diseased lungs a possibility. This possibility attained the dignity of a routine method through the efforts of Pfahler, of Philadelphia, with the augmentation of Hickey's later work on the apices.

* Address before the Worcester North District Medical Society, July 23, 1907.

The medical world, and to a certain extent the lay world, now understand that the optical action of the x-rays on physical substances results merely in a series of shadows, of varying density according to the resistance offered to the passage of the x-rays by the substance productive of the shadow. In no anatomical region is this shadow-complex more clearly depicted than in the thorax and its contents. Shadow impressions of many qualities are produced by the bony structures, the musculature of the heart and diaphragm, the great vessels and the lungs. The lungs themselves are penetrated by the x-rays with relative ease, and therefore they appear brilliantly illuminated — the brilliancy depending on the degree of inspiration, the thickness of the peripulmonic envelope, and certain natural characteristics of the individual in hand.

Mental impressions of two kinds are produced by observing these phenomena in a proper manner and may be described as two types: one type is an impression of the moving picture of respiration and its phenomena, or any abnormality connected with them; the other type is the impression produced by abnormal shadows of varying density, implying an inability on the part of the tissue in question to produce normal shadows. Upon these two types of impressions is based the matter of the recognition of intrathoracic disease by the x-rays.

An examination of the pulmonary region, properly pursued, may be divided into two procedures. One procedure consists in the visual perception of the shadow-complex as cast upon the fluorescent screen; on this screen we have portrayed, as in a *camera obscura*, not only the intrathoracic structures and their relations, but also their rhythmic movements: the expansion and contraction of the heart muscle, the bellying out and the shrinking in of the lung tissue and the rise and fall of the diaphragmatic dome. The other procedure results in the production of a permanent record by means of a process akin to photography, which may be termed röntgenography, of the intrathoracic viscera at the time the exposure to x-rays is made; this record is permanent, can be examined repeatedly at the pleasure of the observer, and can be compared with other records made at earlier or later periods in the course of the malady. Even such superficial mention of these two diagnostic procedures conjointly leads one naturally into an analytical comparison of them. Such comparison has been made by many authors, and an abridged repetitive statement at this time of the advantages possessed by both may be excused, perhaps, on the ground that the comparison may be used as a source from which to draw conclusions.

The value of fluoroscopic observations of normal physiologic movements has long been established by Cannon,[16] Hulst[17] and others in connection with the function of peristalsis. The stomach, particularly, has been watched, after the introduction of food, and has been found to undergo typical movements and to assume typical positions at various moments. Is it not, then, natural

to expect, as Williams did actually show, that fluoroscopy will reveal in the thorax also the physiologic undulations as concomitants of the function of respiration? It is thus easy to standardize normal chest movements, to form a basis upon which to judge abnormality. It has been found, for example, that the normal excursion of the diaphragm, as judged by the movements of its shadow on the fluorescent screen, is within certain constant limitations, depending, of course, upon the force and extent of respiration, and differing slightly on the right and left sides. The expansion of the lungs themselves may be carefully observed. As the lung becomes more and more inflated, it becomes less resistant to the passage of x-rays, and this fact alone plays an important part in one's power to recognize, not only an area already diseased, but a tendency to disease through deficient expansion. It is just as easy to standardize the position and movements of the heart in this way, as well as to discern any unusual appearance in connection with it, as is so often seen in pulmonary cases.

The remaining diagnostic agent of the Röntgen method is the photographic plate. What advantage has this, if any, over the screen, or does fluoroscopy, in its turn, have advantages not possessed by the plate? Williams said in 1901: "When instantaneous photography can be carried out in the lungs, a better opportunity will be offered for obtaining evidence of beginning pulmonary tuberculosis by the photograph than has hitherto been given." Our answer to this must be that we doubt that such time will ever come. Why? *Because there is no such thing as instantaneous photography*, and that there will be is the remotest sort of a possibility. Nevertheless, to the central idea of Doctor Williams's remark (to wit, that when we can obtain photographic results by exposures short enough to catch the lungs at rest, the plate method will become valuable), we are prepared definitely to answer. The routine exposure to x-rays necessary to obtain an impression of the adult thorax now is, or should be, sufficiently brief to be made easily while the patient holds his breath, either at inspiration, expiration or between the two.

It is partly on this account that examinations by röntgenography become valuable. They are valuable, also, from the fact that they furnish permanent records, to be examined at one's leisure, of existing abnormalities, and thus it becomes a simple matter to recognize a lesion which may have escaped the eye on the screen. The röntgenographic method furnishes, also, the possibility of making permanent records at various intervals in the progress of an individual's condition.

Many of my colleagues to the contrary notwithstanding, I am convinced that this method of examining a tuberculous chest cannot, to-day, supplant fluoroscopy for the following reasons:

(1) The diagnostic plate cannot show moving structures. In attempting to make a diagnosis of pulmonary tuberculosis from the degree of respiratory embarrassment, the essential is, not to observe the shadow of the diaphragm at the moment of the acme of its rise, or yet the profundity of its fall, but, rather, its rise and fall *in statu actionis*. The same is true of the pulmonary expansion; we can easily, in these days, make a röntgenograph at full inspiration, full expiration or at any *one* point in the respiratory excursion, but how, in this way, can we watch the *process* of respiration, or compare the right and left chests in motion?

(2) The diagnostic plate cannot offer another advantage which is presented by fluoroscopy — that by which the operator is empowered to increase or lessen, at his own pleasure, the penetrating strength of the Röntgen rays at his command, in the course of a single exposure. In the microscopy of urinary sediments, we are familiar with the fact that certain delicate and diaphanous tube-casts are best observed when the light from the reflector is diminished or tempered. Can you not conceive that the same necessity for holding the penetrating power of the Röntgen rays in abeyance may arise when a delicate infiltration of an apex, for instance, is to be demonstrated?

(3) The diagnostic plate can show but one aspect of the patient — any changes in position mean additional exposures. This is a difficult matter to overcome, as when the additional exposures are eventually made, many conditions, especially the degree of penetration of the x-rays, may have changed.

In order to look at the question with the greatest breadth of mind, we must consider certain qualifications of the röntgenograph not possessed by the screen:

(1) The screen cannot present its image permanently, and its images are of no value for purposes of record except as they form the bases for tracings, a matter later to be considered.

(2) The screen cannot so plainly convey its complete image on to the mind of the observer, although the deficiency may lie with the observer, no doubt. It is often hard for even a röntgenologist of experience to grasp, in the time usually occupied by a screen examination, all the points to be observed and noted. Subsequent examinations of the *same* shadow-complex are necessary, and Opportunity, in this as in other matters, knocks but once. On the other hand, the plate, produced at the time, forever repeats its story.

In the above disjointed manner, therefore, an attempt has been made to lay before you the *pros* and *cons* concerning the two great classifications of the Röntgen method of thoracic diagnosis. That these arguments for and against have many refinements and elaborations it seems hardly necessary to say. If one adheres too closely to the earlier method of fluoroscopy, he lays himself open to the criticism of being behind the times in Röntgen procedure; if, on the other hand, he be too quick to seize upon the röntgenographic method with its powers for brilliant results, he may be charged with erratic desertion of the old for the new. To all medical men who will give the matter sober thought, it must appear evident that each method has so many good points that it cannot be shaken from its place by the other.

The fluoroscopic method offers, to the trained observer at least, a greater chance for mental balancing and judgment. The röntgenographic method, on the other hand, appeals more to the clever technician as an opportunity to produce the brilliant results of his handiwork.

The fact is, gentlemen, we must accept both. We must accept the screen, because by that means we obtain a moving picture of living things obtainable in no other way. We must accept the plate also, just as, although we can feel the pulse at the radial artery, we are glad to accept a sphygmographic tracing of that pulse, or, although we can see the comet in the field of the telescope, we are glad to accept a detailed photograph of that comet and the surrounding solar system. Thus we find that the weapon we have received from Röntgen to use in this war on pulmonary tuberculosis is a double-edged sword. Although each edge cuts well, the weapon is most efficient when both are used.

It is necessary for us now to determine how much of an addition this weapon is to our armament, formidable though it seems to be. In other words, is the Röntgen method of diagnosis in pulmonary tuberculosis of value to us in the *early* cases? By early cases is here meant those cases which present no physical signs except, possibly, slight malaise with evening rise of temperature, a little loss of flesh, anemia and diminished appetite for food. It is in these cases that the most carefully conducted procedures of auscultation and percussion may offer little or no evidence. Without expectoration, it is most difficult to obtain the bacilli, and a Röntgen examination by means of the skiagraph offers no more satisfactory results than does the stethoscope. These are the cases pre-eminently for fluoroscopy. What such cases present on the screen has been so well described by Williams and others who have given the matter unbiased judgment, that repetition is not necessary. Suffice it to say that this fluoroscopic evidence is often characterized by a lessened rise and fall of the diaphragm, and a diminished expansion of the thoracic walls, even if we do not perceive, with the intensity of our x-rays under control, the unmistakable picture of a slight modification of the usual brilliancy of the lung area at one apex. A little practice will enable one keenly to observe these deficiencies, and even to measure the abnormality in centimeters.

Such cases may present to the trained ear the suspicion, for example, of prolonged transpiration on one side, or to the sensitive finger the slightest sense of resistance at one apex. This is undoubtedly true; but how often have cases been recorded where no such impressions have been conveyed to the most skilled finger or acute ear, and in which there has been found on the fluoroscopic screen the pulmonary expansion and the diaphragmatic excursion very nearly, but not quite, as full upon one side as upon the other?

When a positive diagnosis in an early case is somewhat doubtful, one would never question the convincing proof established by the presence of the bacillus tuberculosis in the sputum; nevertheless, we know that there does exist a prebacillary stage of the malady when to obtain the microorganism is a most difficult matter. There are also instances, as has been mentioned, where it is no small task to elicit signs by the stethoscope. In the face of such facts as these, it would be absurd, indeed, to claim infallibility for the Röntgen method, or for any other. All methods are useful when chosen carefully, and it is only when one is carried to extremes that the others are lost sight of.

In well-marked or late cases, where signs and symptoms are all too clearly evident by any mode of diagnosis, Röntgen examinations are valuable, chiefly as confirmatory evidence, in direct proportion to the value of any other one method. They are also directly useful in determining the *extent* of well-established disease, and the character of suspected lesions, such as cavity or calcified tubercle. In this way it is not usually more useful than other methods.

While it is my desire to avoid mention of technic as being outside the scope of this address, I wish merely to speak of one technical point. It is often desirable and advantageous to obtain tracings or outlines of fluoroscopic appearances as a means of rapid record or for teaching. This can be done by following the shadows on the screen with a pencil or other marker on celluloid or some transparent substance, in front of the screen. It is essentially desirable that the tracing apparatus be so arranged that the source of x-rays, which is behind the patient, may move with each movement of the pencil, in any direction. Thus it will be seen that the most direct x-rays will be always in a straight line from the pencil, and the element of distortion of shadow will necessarily be reduced to a minimum. This is the principle of so-called *orthodiagraphy*, which has been used, especially by the Germans, for some years. By thus outlining the application of tracings, I desire to correct the erroneous impression, created, possibly, by a previous remark, that no record can be obtained by fluoroscopy.

What is to be the future of this science, as applied to examinations of the chest? This is a question which we may well hesitate to answer, for who, in 1896, could have imagined that a permanent record of the thoracic contents on a photographic plate would eventually be made while the patient holds his breath? It is possible to conceive that our most radical advances may be exemplified by a combination of the röntgenograph and the cinematograph, or some other moving-picture device. Indeed, this has already been thought of seriously, and in a manner described. Only render it practicable, and the day will arrive when we may enjoy the altogether novel sensation of gazing at the enlarged images of our pulsating hearts and our expanding lungs projected through the stereopticon! As to the future none can say; the accomplishments of the past are marvels enough in themselves.

Conclusions which may be drawn reasonably from these observations are:

(1) That the Röntgen rays, through the media

of the screen and the photographic plate, are of distinct value in the diagnosis of pulmonary tuberculosis.

(2) That by virtue of the power given us by the Röntgen rays visually to perceive subtle changes in the thorax, we are often able to recognize the invasion of a pulmonary tuberculous process in an *earlier stage* of progress than it is to-day possible to do by the sense of hearing or touch.

(3) That to depend, however, upon the Röntgen method to the exclusion of others, namely, auscultation and percussion, the tuberculin test, or the staining fluids and the microscope, we do little else than proclaim ourselves bigots.

(4) That, if we recognize this new diagnostic agent, and make wise use of it, together with others already given us, employing *all* energetically for the benefit of the patient, while he is yet in a condition to be cured, we need never reproach ourselves with failure.

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Original Articles.

THE CHANNELS OF INFECTION IN TUBERCULOSIS, TOGETHER WITH SOME REMARKS ON THE OUTLOOK CONCERNING A SPECIFIC THERAPY.*

BY THEOBALD SMITH, M.D., BOSTON.

IN choosing this somewhat well-worn subject in answer to an invitation to speak on some aspect of the problem of tuberculosis, I was led by the present rather unusual activity in the study of the digestive tract as a portal of entry. This bustling activity is due in the first place to the somewhat morbid tendency of research to seek out the new, rare and unusual, and magnify and illuminate them so that to our dazzled eyes all the laboriously reared truths of the past become invisible for the time being. It is furthermore due to the dicta of two prominent men, one of whom proclaimed that bovine tuberculosis was of no consequence as a source of the human disease, and the other that all tuberculosis originates in infancy and that much of it was due to cow's milk.

The widespread movements tending towards the education of the public concerning the nature of tuberculosis and the modes of diffusion and transmission of the bacillus had brought to the foreground the older theories that tuberculosis is largely an inhalation disease and that the chief source of infection is the coughing consumptive. While all agree that the sputum is the vehicle in which bacilli leave the body, that there is, in fact, no other mode of excretion of the bacilli in man, which can be seriously entertained, there has developed a marked disagreement, or at least an attitude of assumed ignorance, as to the chief portal of entry. While inhalation has been and is still looked upon as the most frequently used mode of entry by some, others have gone so far as to deny the aërogenic infection of the lungs completely, and they trace pulmonary disease through the avenues of the intestinal mucosa and the associated lymph nodes, or the tonsils and cervical lymph nodes. In other words, the tendency on the part of a certain group headed by von Behring has been to cut out entirely the direct introduction of tubercle bacilli into the lungs through the respiratory tract and replace it with certain more circuitous routes, dealing with ingestion rather than inhalation.

Associated with and largely responsible for this change of view as to the significance of ingestion tuberculosis is cow's milk. Were it not for cow's milk as an occasional carrier of bovine tubercle bacilli we should probably have heard little of ingestion tuberculosis.

INGESTION AND INHALATION TUBERCULOSIS.

We have thus two main questions before us: 1. Is the path of the tubercle bacillus to the lungs chiefly by way of the digestive tract? 2. To what extent is bovine tuberculosis responsible for the human disease?

The difficulty encountered in taking a definite position on the question of the paths of the tubercle bacillus, both without and within the body, is due to the fact that almost anything we may say concerning the tubercle bacillus has a grain of truth in it, and may be realized at one time or another by observation and experiment. The goal towards which we should strive, however, is to discover the ordinary, common paths, and not the merely possible or extraordinary ones. Even in the experimental disease produced by tubercle bacilli in the lower animals we occasionally encounter peculiar localizations. The cryptogenetic tuberculosis of the bones, the kidneys and other organs, wholly outside of the usual paths of the tubercle bacillus in the body, shows well the occasionally irresponsible activities of this organism.

The character of the disease started by the tubercle bacillus, like that of other infectious diseases, is dependent upon a number of variable factors. Among the most important are: the virulence of the infecting organism, the age of the patient, the inherited susceptibility or predis-

* Read before The Massachusetts Medical Society, June 11, 1907.

position, a previous infection, accidents which convert a latent or healing local into a generalized disease, and finally the mode of entry.

As regards the virulence of the infecting organism, I must admit that our methods are not perfect enough to disclose minor differences. Until the facilities of the average laboratory extend to the breeding and rearing of our experimental animals, our tests upon animals can only be relied upon to distinguish such gross differences in virulence as exist between the bovine and the human type. There are, however, differences between cultures of the human type which impress themselves upon the investigator as more or less constant, although it would be difficult to define them readily. We may safely assume that a considerable number of slightly varying races of human tubercle bacilli exists, and it is probably not a matter of indifference to the patient which of them is at work.

Age is a most important factor, as all statistics and experimental inquiries show. In this respect tubercle bacilli do not differ materially from other infectious agents which find their easiest prey among the young. Statistics prove that tuberculosis becomes rapidly generalized in infancy and that it is a highly fatal disease. The conception of latency which has been introduced into the subject in recent years by von Behring does not at all tally with such statistical and pathological researches. That a bacillus which is especially virulent for the young should lie fallow in some organ or tissue of the body without multiplying is, to say at least, revolutionary to our current conceptions. Experimenters have been for years familiar with this conception of latency, or persistence, of infectious agents in the body of those who are relatively immune, and of those who have recovered from a disease, but not with the idea that bacilli can be latent in the highly susceptible young. It is possible that such bacilli may be very feebly infectious, and that subsequent disease is not due to them, but to later infection with more virulent types. It is furthermore possible that certain antibodies may be transmitted from mother to child, and that these are slowly excreted and disappear after three or four months unless the mother's milk continues to supply them. Under such conditions it is conceivable that, in the earliest months of life, or even longer, during the period of lactation, bacilli may be restrained and then multiply subsequently.[1] In any case I doubt that such latency could be prolonged over a year at the longest. The subject is a difficult one at best. How we can tell in any case that there has been no fresh infection where we suppose the disease to have been latent, I do not see. The possibility of fresh infection with, perhaps, more virulent material must always be reckoned with.

The influence of inherited predisposition, though an unknown quantity, cannot be given up at present, and I believe it plays an important part in the fight with tuberculosis. The capacity for producing antibodies, for phagocytosis and the other protective factors probably varies from individual to individual, and has its definite, prescribed limits.

The influence of one attack of tuberculosis, provided structures have not been seriously damaged, must be considered a distinct asset, since we now know that immunization of cattle with human tubercle bacilli is possible.

The influence of accidents, such as trauma, intercurrent diseases, secondary infections in favoring dissemination of the disease, is so well known that I merely mention them.

With all these factors at work and influencing the process, it is obvious that our inferences and conclusions as regards portals of entry, dissemination and the results of different kinds of treatment must be cautiously made, for they cannot safely rest on a few in part faulty experiments, which may strain and largely overpower the physiological protective mechanisms, and which may fail to reproduce the usual conditions present during spontaneous infection, but they must also take into consideration the work of pathological anatomy and histology, and utilize the results of statistics collected at the autopsy table.

Coming to the first controverted question, whether all tuberculosis is chiefly or exclusively alimentary in origin as maintained by some to-day we find that two different lines of research are involved in it:

1. The anatomical and physiological problem of the absorption of tubercle bacilli, soot, etc., by the mucous membrane of the intestines and their conveyance to the lungs and thoracic lymph nodes without being stopped by the mesenteric nodes.

2. The behavior of the organism in the presence of tubercle bacilli in any of its tissues under the influence of different degrees of a specific resistance or immunity.

As regards the passage of bacilli through the mucosa of the intestine it may be said that some twenty years ago the opinion was quite general among pathologists that the tubercle bacillus produces a lesion at the point of entry. With the more exact and detailed study of tuberculosis in infants and children, and the disease in cattle, this position had to be gradually abandoned. To-day most authorities will admit that the tubercle bacillus may pass through mucous membranes without leaving any pathological traces of its passage, to settle down in the nearest lymph nodes.

How the bacilli gain an entrance into the lymph vessels of the mucosa, whether by the aid of normal, physiological processes, or through minute lesions, is not determined. Their next station would be the mesenteric lymph nodes. The original claim held by many to-day is that in the mesenteric lymph nodes the tubercle bacilli come to rest and multiply, producing distinct lesions. If they escape it is only after leaving the well known traces of their passage behind.

Within the past four or five years a further modification of the original position has been

[1] In a former paper I advanced another hypothesis to explain such latency of tubercle bacilli: The Parasitism of the Tubercle Bacillus, etc. Jour. Amer. Med. Asso., 1900.

adopted by some, namely, that tubercle bacilli may not only pass through mucous membranes, but also through the related lymph nodes and settle down and produce disease at a point quite distant from the point of entry, without leaving any intermediate traces of their passage. It is obvious that if they escape through the mesenteric lymph nodes their next stopping place would be the capillaries of the lungs and, as a result, we would have a primary tuberculosis of the lungs due to swallowing tubercle bacilli. That this is possible few pathologists will deny; but is it probable and is its occurrence of sufficient frequency and importance to permit the overthrow of the aërogenic infection in phthisis? Two lines of experiments have been made to prove this. Dogs have been fed tubercle bacilli in milk or other fatty foods, and the tubercle bacilli found in the thoracic duct some hours later. Cattle have been fed with tubercle bacilli with stomach tube and slight tuberculosis of the lungs produced. Animals have been fed with various finely divided powders, either with or without stomach tube, and the pigments found in the lungs. These various experiments, though plausible on the surface, do not, in my mind, prove the contention. The large number of bacilli introduced may have overpowered the usual protective agencies, there may have been aspiration into the air tubes following withdrawal of the stomach tube, and finally other investigators claim that if pigments are fed in the usual way and kept wet they are not found in the lungs subsequently.

Perhaps the most opposition has been aroused by the attempts to trace pulmonary anthracosis to the ingestion, rather than the inhalation of soot, a process firmly established by the exhaustive experiments of J. Arnold over twenty years ago. Without delaying over the experimental data, let me call attention to the fact that large amounts of fine particles are taken into the digestive tract by our domestic animals daily in their food, and if any absorption takes place it would be detected. The mesenteric and meso-colic lymph nodes of the omnivorous dirt-eating pig are free from pigment. In the ox, the mesenteric lymph nodes of the young are quite free from any pigment, but when the milk diet has been replaced by the usual diet of grass, hay and grain, these nodes become heavily pigmented, not with soot, etc., but with pigment particles derived from the blood. When we turn to the thoracic lymph nodes in the same species draining the lungs, another picture presents itself. At first these nodes are unpigmented, but as the animal grows older a faint subcortical line of pigment shows itself which grows heavier and denser with age. This consists of black particles and translucent fragments. In the horse similar conditions prevail. A delicate black tracery of the subpleural lymphatics in old animals indicates a frequent deposit in the lungs as well.

It is of interest, furthermore, to note that in cows the primary foci of tuberculosis are situated in the thoracic lymph nodes among the pigment, suggesting most convincingly the aërogenic source of both. If this pigment in these nodes comes from the intestines, why does not some of it remain in the mesenteric nodes? Why do these, instead, retain in large numbers, chiefly in phagocytes, the blood pigment, and why is this not passed on? Possibly it may be answered that a special chemotactic affinity exists between the phagocytes on the one hand, and the blood pigment on the other, which does not exist between phagocytes and soot, etc. But if this answer is true, we surely cannot pass over the still more important chemotactic affinity between tubercle bacilli and the cells of the mesenteric lymph nodes.

A careful reading of the recent literature shows that the promoters of the theory that tubercle bacilli may readily pass from the intestines to the lungs without stopping to multiply, and thereby produce disturbances on the way, have not taken sufficiently into account the fact that tubercle bacilli are not like grains of lampblack, but living organisms which arouse a more or less prompt reaction on the part of the invading tissues, and which cannot travel about the body at will without being recognized and held.

The varying conditions of immunity and predisposition have much to do with the localization of tubercle bacilli and the shaping of the disease process. It is evident that the different stages in life do not react alike towards tuberculosis.

What may be true in earliest infancy is not absolutely so in childhood. Even puberty, middle life and old age have their respective types of tuberculosis from which, it is true, there are deviations, owing to the variable factors already mentioned, but there is as a rule a clearly defined growing immunity with age. There is even a varying immunity of the different organs of the same body towards the tubercle bacillus, and this may not be the same at different ages.

The lungs may be said to be the *locus minoris resistentiæ* for tuberculosis, not only for man, but for the higher mammals as well. Disease starting elsewhere, if not checked by death or recovery, sooner or later leads up to the lungs. In my second paper on bovine and human bacilli, published nine years ago, this behavior of tubercle bacilli was fully appreciated. It is there stated: "The question of phthisis as secondary to infection by way of the digestive organs is, however, one needing more attention. . . . In all mammals the lungs are evidently the most favored place of tubercle bacilli, and wherever the latter may be deposited, they sooner or later, unless the disease is checked, reach those organs, where the process spreads more rapidly than elsewhere."

In the attempt to establish the alimentary origin of tuberculosis, some have based their arguments on the fact that inoculation into different parts of the body, even into the tail, may lead to the pulmonary disease. This fact has been known for a long time, and has been mentioned by various observers. The question before us is not whether the lungs can be made diseased secondarily. That this is possible, and occurs frequently, as in miliary tuberculosis, is well known. The real question is whether the usual

types of pulmonary tuberculosis appearing at some one point in the lungs start from the intestines without leaving any signs of their passage or whether they are the result of inhalation. That is to say, Is the pathologist wholly powerless to trace the paths of the tubercle bacillus in the body? I think not. With the aid of our knowledge concerning immunity, the following general laws may be laid down:

In infants, the entry of tubercle bacilli is easier through all portals, and a generalized tuberculosis results from the rapid multiplication of bacilli and their diffusion through the feebly resistant tissues and vessels. With increasing age this indiscriminate passage of bacilli is checked, and the bacilli are held back by the reacting tissues in the nearest lymph nodes, the so called regional nodes. This gives us the common types of tuberculosis of childhood. It is also the type of the disease in young cattle. With increasing resistance, as at puberty and later, we have certain portals of entry, such as throat and intestines completely closed under ordinary conditions, and an inhalation disease appearing almost exclusively because the lungs, the most vulnerable organs, are still accessible through the respiratory passages.

COW'S MILK AND TUBERCULOSIS.

Closely interwoven with this new or revived doctrine of the alimentary origin of pulmonary tuberculosis is the widespread belief or assumption that milk infected with bovine bacilli plays a large part in the etiology of human tuberculosis. The history of this belief is of interest in showing the to-and-fro swing of medical doctrines. Following the epoch-making study of Koch in 1882, the assumed identity of bovine and human tuberculosis, as formulated by him, provided a basis for the world-wide movement against bovine tuberculosis as a source of the human disease. Excessive zeal in this direction was, however, kept in check by the scarcity of alimentary tuberculosis and the universally accepted doctrine that pulmonary phthisis was an inhalation disease.

In 1896 and 1898 I demonstrated the existence of two types of tubercle bacilli, the bovine and the human; emphasized the inadequacy of the evidence on which the transmissibility of bovine tuberculosis to man was founded, and pointed out that with the aid of these two types we could now build up more satisfactory statistics. In 1901 Koch, who had meanwhile studied the same subject, in a now memorable address, claimed that owing to the difference between human and bovine bacilli, bovine tuberculosis was a negligible factor in the human disease. As a result of this address, commissions were appointed in different countries to investigate Koch's claims. The German Commission reaffirmed the existence of the bovine and the human type, as representing distinct races of tubercle bacilli. The same has been done by the English Commission in their recent report. But the latter claim that these two types are simply extremes of an intermediate series of transition forms and admit, with considerable reserve, however, that there is some evidence of mutation, and that perhaps the bovine type may be converted into the human type by a sufficiently prolonged sojourn in the human body.

Coincident with this study of the relation of bovine and human tubercle bacilli to one another, nearly all observers who have studied series of cases of the human disease have found, in certain cases of tuberculosis, bacilli of the bovine type. The labors of Ravenel, the author, the German and English Commissions, Rabinowitsch, Fibiger and Jensen, and others have collected between 40 and 50 cases of the bovine type in infants and children. Some cases were fatal, others not. In practically all these cases the disease started either in the tonsils and related cervical lymph nodes, or in the mesenteric lymph nodes. So far as I know only one bovine culture has thus far been isolated from sputum, and this by the English Commission. Together with two other types it was isolated from a calf fed with large amounts of mixed sputum.

The cases from which these bovine bacilli were isolated are all selected cases, and we have at present no way of determining what percentage of progressive fatal tuberculosis is due to them. The statistics of alimentary tuberculosis vary from place to place, and even these cases are largely associated with the human bacillus. The only way to gain some adequate insight into the amount of damage done by bovine bacilli would be to take a series of consecutive cases both in sanatoria for adults, and in children's and infants' hospitals, and study the bacilli of every case for a given period. I venture the statement that probably not more than 1% of all cases will show bovine bacilli, and that in individuals over twelve years they will be found only very rarely. However, this is a mere guess and it should not take the place of actual figures.

The methods of isolating and identifying tubercle bacilli of the two types is now so far advanced that the clinical laboratories should take up this study. A series of cases carefully studied clinically as well as bacteriologically may lead to some means of clinical diagnosis between the two types of disease, since the bacteriological diagnosis under ordinary circumstances compels us to wait at least three months before a decision can be made. It is also highly desirable that any aberrant or peculiar type of tuberculosis be studied bacteriologically in order to determinine the nature of the invading bacilli.

The issue then would appear to be clear-cut and it would seem as if the whole question might be solved bacteriologically. But those who insist on the old doctrine of indiscriminate transmissibility of the two types of bacilli, and who are fortifying themselves by attempting to establish the doctrine of the general alimentary origin of tuberculosis, go a step farther, and assume that the bovine type may gradually change into the human type in the body, so that the adult phthisical patient would discharge the human type in

his sputum, whereas he may have absorbed the bovine type earlier in life through the digestive tract. This is, perhaps, a plainer and franker statement of the hypothesis than its adherents have been willing to make, but there can be no harm in viewing its bald outlines. The possibility of such a transformation I took into account as far back as 1898, and stated it as one of the theses to be investigated, although I did not then, nor do I now, believe in its realization.

The only way in which such an hypothesis could be tested would be to find a species of mammal in which the human type is always found, perhaps some race of monkey, and pass the bovine bacillus through a series of individuals. But the possibility of latent foci in such animals might at any moment imperil the accuracy of the experiment, by bringing into our cultures a human type from outside sources.

That the tubercle bacillus possesses a certain plasticity has been brought out by various investigations. Cultures from domestic animals other than bovines, but evidently derived from the latter, I have found slightly different as regards virulence from parallel bovine cultures. But that the bovine type should be converted into the human type has no analogy in the domain of bacteriology, and as long as it is not clearly proved to occur, it cannot be accepted on mere speculation. Again, if the bovine and the human cultures are indiscriminately transmissible to either species, why should two types have arisen? These must have been developed from some parent stock in obedience to the demands of the respective host harboring them.

Bacterial species producing specific invasive diseases in man and animals have their congeries of characters well fixed. Degeneration of such characters may occur, but the transformation of one into another, even closely related, race of variety has not been accomplished. Nocard claimed to have transformed mammalian into avian tubercle bacilli, but this solitary experiment should be repeated and tested with the aid of our present knowledge of the tubercle bacillus before it can be fully accepted.

The transmission of infectious animal plagues to man occurs in the case of glanders, anthrax, rabies and bubonic plague. In these infections which are due to bacteria, only one type of microbe is known, not two. The transmission of glanders to man occurs rarely when we consider the large number of glanders-infected horses in our midst, and the opportunity for infection. Man is predisposed only to a limited degree, and the transmission of infection requires, without doubt, certain specially favoring conditions, as seems to be the case in man when exposed to the bovine tubercle bacillus. If, as is claimed by some, the bovine and human types of tubercle bacilli simply represent a connected series, and if there is no sharp distinction, it is rather strange that adult man should harbor the least virulent type. Usually, the older the attacked individual the more virulent the attacking organism, for it is the old that infect the young.

To look towards another species for the main source of contagion in a human disease which has its own bacillus and machinery of transmission is a bacteriological anomaly, which has no parallel at present, not even in the bubonic plague. The anomaly is in fact so great that no experienced bacteriologist who has studied pathogenic species over any period of time is found to favor it. At the same time, I believe that we should not stop in our investigations, but work out the problem in every direction. If an anomaly is really discovered and proved, we must accept it. But I believe it wholly premature to base upon it far-reaching practical measures, whose cost to the community might destroy the opportunity of saving many times more lives than are injured or destroyed by bovine virus. In short, the entire field of bacteriology may be hunted over without avail to find a precedent for the assumption that two distinct races of bacilli adapted to two widely separated hosts, such as the ox and man, are indiscriminately transmissible. All that we can say is that in certain receptive stages in life, characterized by a low degree of resistance, such transmission may occur, and it does occur under circumstances not yet fully known. I am, therefore, of the opinion that man has only a limited susceptibility to bovine tuberculosis depending on certain still unknown factors. It is from this standpoint that I shall discuss very briefly the practical side of the subject.

The recent attempts to prove all tuberculosis of alimentary origin, if seriously entertained and if finally proved, would lead to a certain readjustment in our sanitary measures. The tuberculous patient would not only be dangerous near us, but at any distance, provided he came into any relations with us. Those who prepare our foods could infect us at any moment. The bread and pastry we buy, the milk we drink if handled by a tuberculous patient, even the clothes we wear would bring an element of danger. Every act of coughing would be dangerous, even if the sputum were carefully destroyed, because the spray might settle down and infect our food.

It seems to me that before placing an additional ban on the tuberculous we should patiently wait for satisfactory proof, and not be stamped from one position into another before we have inquired into the qualifications of the innovators, and the accuracy, if not reasonableness, of their statements. The problem of bovine tuberculosis should be dealt with in a similar temperate manner. We have learned during the past nine years that there is a bovine and a human type of the bacillus which all reliable bacteriologists have recognized. We have furthermore learned that in a selected number of cases of alimentary tuberculosis the bovine bacillus has been found. This is all we know and all the rest is uncertain and speculative.

As regards the source of the bacillus, we know that it may come from the udder or from the feces, when sufficient cleanliness is not observed. The udder becomes tuberculous through metastasis in, perhaps, 1% of tuberculous cows, roughly

speaking. The parenchyma or secreting structures become the seat of tubercles, and the milk may contain in certain cases large numbers of bacilli. When children are fed with such milk, they are overpowered by the many bacilli, and where a few might pass through, of the large numbers daily ingested, some invade the body. When udder tuberculosis exists in a herd samples of the mixed milk may prove infectious for guinea pigs, because the large numbers shed by one animal are disseminated through the entire mass, and enough may be present to make all the milk infectious for guinea pigs by inoculation.

There has been a vigorous discussion whether cows which simply react to tuberculin and which show no clinical signs of tuberculosis do or do not shed bacilli in the milk. Some observers contend that they may do so. Others deny the contention. My own experience coincides with the latter. Ostertag, who made a careful study of this subject for the Prussian government and who found no tubercle bacilli in the milk of reacting animals, pointed out that the discrepancies between observers may perhaps be explained by the soiling of the udder with feces. In cows with a discharging focus in the lungs, the swallowed sputum would maintain a slight infection of the feces. He drew the milk himself, and carefully cleansed the udder. In one case in which the feces were infectious, the udder when left uncleaned yielded milk which produced tuberculosis in guinea pigs. After due cleansing it failed to do so.

If Ostertag's interpretation is correct, and I am inclined to believe it is, a careful periodical inspection of dairies by competent and conscientious veterinarians, followed by the removal of clinically tuberculous animals, and all that had any suspicious abnormality of the udder, and the enforcing of cleanliness would eliminate practically all danger. Some chances for slight infection of the milk may still remain, as is equally true of typhoid fever, diphtheria and other infections in the dairy; but the amount of infection would be greatly reduced if not entirely eliminated, and in tuberculosis more than in any other disease, I believe that the number of bacteria plays a very important part in the final infection of the human subject.

THE RESTRICTION OF BOVINE TUBERCULOSIS.

In view of the relatively small percentage of cases of transmitted bovine tuberculosis, and the very slight chances for the infection of the milk of cows in the early stages of the disease, the question, what policy designed for the protection of the public will do the greatest good, is a perplexing one.

It seems to me that competent dairy inspection, the removal of all animals which show evidence of udder disease and which from a clinical examination can be pronounced tuberculous, and the enforcement of strict cleanliness are what should be insisted on.

This supervision, as I pointed out over ten years ago, not only greatly reduces the chances of tubercle bacilli in the milk, but it also restricts and suppresses two other factors which injure or destroy probably a hundred times more children than the bovine bacillus. These factors are miscellaneous putrefactive and fecal bacteria from filth, and the germs of specific human diseases accidentally introduced by those concerned in the production and distribution of milk.

About ten years ago the hope was entertained in some quarters that bovine tuberculosis might be completely exterminated by some concerted and persistent effort. While the attempt was in istelf laudable, it overlooked certain obvious facts, and it was planned on such a scale that it was bound to fail. It was based on the methods of procedure of the National Government in its fight against bovine pleuropneumonia and foot-and-mouth disease. The nature of these two diseases, their relation to other species, the character of the virus and its diffusion over a limited well-defined territory made the task of suppression a reasonably certain one, even though the cost was great. But bovine tuberculosis differs widely from these infectious diseases in almost every one of the details which have made the others manageable. To suppress bovine tuberculosis it will be necessary to have the co-operation, either compulsory or voluntary, of those who produce milk, and to establish, so to speak, islands or centers of tuberculosis-free animals, and slowly increase such territories. To look to our state and national governments for paternalistic aid to control a disease with which the farmers are now well acquainted will not work even if it were just to the rest of the population. The only way to make any progress is for the consumers to insist on milk from inspected herds and pay the price necessary to keep them free from disease.

In our own state, the Board of Health inspects dairy herds and the Cattle Bureau removes, pays for and slaughters clinically diseased animals. It also tests all animals coming in from other states at the public expense. What is the cattle owner doing in response to this paternal assistance to restrict tuberculosis? If we examine the annual reports of the Chief of the Cattle Bureau, Dr. Austin Peters, we find that in 1900 there were condemned, killed and paid for by the state 1,423 head of manifestly tuberculous cattle; in 1901, 1,341 head; in 1902, 1,001 head; in 1903, 1,172 head; in 1904, 1,658 head; in 1905, 1,625 head, and in 1906, 1,202 head.

In other words, the state can buy as many clinically diseased cattle as it cares to appropriate money for. The cattle owner raises his tuberculous crop each year to be shouldered and paid for by public taxation. The only way to make any progress after these many years of patient compensation for diseased animals is for the state to take them without compensation, and for the public to patronize milk from tested herds. It has been amply shown that tuberculosis can be restricted if a little thought be given to the subject. Our national government distributes tuberculin and suitable directions for its administration,

free of charge. Surely the means for individual initiative are not lacking, excepting one, and that is a little judiciously applied coercion. A law to remove the item of compensation after a definite number of years would probably bring about the desired reform.

There can be no doubt that the public is in a difficult situation with reference to the milk supply. The congested population of our large cities must draw its stock from a very large territory, and few can trace to the herd the milk that is daily delivered, owing to the multiplication of middle men necessarily engaged in its distribution and the distance from which it is brought. The adjustment of this difficulty is a delicate one and is an interstate question. In the meantime, the helpless and distracted public may protect infants and young children from the occasional chances for infection by pasteurizing the milk. It should be stated in this connection that the lowest temperature which destroys tubercle bacilli is 140° F., and at this temperature the shortest allowable time is twenty minutes. The heating must be done in closed vessels to prevent the formation of a scum or film in which tubercle bacilli may survive the heat.

I wish finally to mention a possible source of infection to which no attention has been given. It is one which I mentioned as worthy of consideration in 1898. If the milk of tuberculous cows may infect children, may not the dust and dirt of cow stables affect adults working in them?

I have already stated that only one not very clear case of bovine bacilli in sputum has been reported. It seems to me that the study of a series of cases of tuberculosis among those working in cow stables is desirable at the present time, and I am prepared to make such a study if the sputum is sent to me fairly fresh and a carefully prepared record of the history and present condition of the patient forwarded with it.

The conclusions which I think are warranted by the investigations upon human and bovine tuberculosis up to the present may be stated as follows:

1. The coughing consumptive is the chief source of infection.

2. The digestive tract is not the exclusive or even predominating portal of entry for pulmonary phthisis. It is highly probable that most cases are due to inhalation or aspiration.

3. In infants the bacilli probably gain entrance through all portals more easily than later in life, and the disease becomes more easily generalized. There are no rational grounds for believing that latency in infancy plays any appreciable rôle in the disease of later decades, but ingestion probably does play a much more important part in infantile tuberculosis, owing to habits and susceptibility of this period of life, than has been granted heretofore.

4. Bovine tubercle bacilli are found associated with a certain, at present not fully calculable, proportion of cases of abdominal and cervical lymph-node tuberculosis in infants and children.

5. There is at present no evidence that bovine bacilli may be transformed and assume the human type in the human body.

6. The discharge of tubercle bacilli into the milk of cows may take place abundantly in udder tuberculosis. In a small proportion of manifestly tuberculous cows without evidence of udder disease, it may take place at times in very small numbers.

7. A reasonable restriction of bovine tuberculosis below the danger limit to man is possible with the aid of tuberculin and segregation, and the removal of clinical cases and of udder disease. An eventually complete elimination can be brought about in this way in any herd, provided other domestic animals, such as pigs, cats and dogs, are kept under control as possible reintroducers of the infection.

8. The complete elimination of bovine tuberculosis may be hoped for in the distant future. An active co-operation of individuals with municipal, state and national forces, by exerting a steady pressure and diffusing more knowledge among farmers as to the nature of tuberculosis and the use of tuberculin, may lead to its final disappearance.

9. The factor of bovine tuberculosis in the human malady is not of such importance that it should be permitted to imperil the proper execution of measures designed to relieve and cure the strictly human disease, or divert attention from it as the chief evil.

THE OUTLOOK CONCERNING A SPECIFIC THERAPY IN TUBERCULOSIS, AS VIEWED FROM THE EXPERIMENTAL AND COMPARATIVE STANDPOINT.

Having been asked to say a few words upon the present status and promise of serum therapy and vaccine in tuberculosis, I do so somewhat reluctantly, and I place myself distinctly upon the experimental standpoint for two reasons. In the first place I have had no personal experience with the use of serums or vaccines as applied to cases of the disease. In the second place I believe that our fundamental data must come from experiments on animals.

Since the various kinds of treatment of tuberculosis may all be classed either as passive or active I shall group my discussion under these heads. It is now pretty generally understood that serum therapy is a method of transmitting one or more antibodies, produced in some animal artificially, to the patient in order temporarily to fill a gap, to provide a substance which is wanting but essential in the struggle against the disease. This want is filled by the serum until the body has sufficiently recovered to manufacture for itself the antibody. The use of serums is most successful in rapid toxic diseases in which there is only toxin to be disposed of, but no bacteria. When we come to the slower invasive diseases, like tuberculosis, the injection of a therapeutic serum would have to be made over long periods of time because its need would be continuous. But even then it is a question whether the serum would be of any permanent benefit, because to

throw off the disease the body must finally make its own antibodies. The serum is like a crutch which must sooner or later be given up when the patient is strong enough to try walking alone.

Approaching the subject from the practical side we know that no serums have proved to be of any generally recognized value in the treatment of invasive diseases. The immunization of large animals is slow and difficult, and it can be carried only to a certain point. Such sera would in any event be very expensive and hardly within the reach of the average patient. Then, again, the repeated injection of foreign serum over a long period is not to be looked upon lightly.

From both the experimental and the practical standpoint the outlook for serum therapy is not encouraging, though I should not wish to say that it is hopeless. In some one form or another, unknown to us at present, there may be built up from the fragments of the present passive and active forms of treatment a successful method accessible to all patients.

Owing to the difficulties, both theoretical and practical, surrounding the use of a curative serum, investigators have again turned to the method of inducing active immunity. This consists in stimulating and rousing the latent activities of the diseased body to produce its own antibodies. Begun with the introduction of the old tuberculin by Koch in 1891 it has had various fortunes, but it seems again fairly well established to-day. All the methods are based upon the introduction into the body of the products of tubercle bacilli. The fundamental underlying principle appears to be a reliance upon the diseased body itself with the understanding that it possesses sufficient forces to establish its own cure if these forces are properly husbanded and properly called forth. These forces are limited in amount at any given moment, and perhaps in time exhaustible. They should not be wasted because we know that the organism reacts with a very lavish production of antibodies. In the treated horse, for example, diphtheria antitoxin present in the blood can neutralize thousands of times the amount of toxin which is injected at any given time.

The presence of tuberculosis indicates that these antibodies are below normal, or have been so at some time in the past. These considerations suggest the use of very small doses of the stimuli and only at the proper time. Sir A. E. Wright maintains that in the antibodies known as the opsonins we have such a guide, and the index of this guide is phagocytosis. Some are inclined to neglect this guide, and utilize clinical symptoms in the treatment.

It follows from the theory of action of these stimulating substances that they are not called for in active, febrile stages, when the body is apparently fully roused and needs no stimulus from without. Under such conditions an antitoxic serum might be helpful to neutralize the over-abundance of toxins until the system had recovered itself.

It is furthermore evident that the application of these substances may bring into action various tissues of the body beside the immediate focus of disease. The whole body may thus be laid under contribution artificially to relieve a limited area, which is unable to protect itself.

In the practical development of this mode of treatment by gradual cautious stimulation, many substances have been used, all of them derived from the tubercle bacillus. The old tuberculin comes first in the order of time; next the new tuberculin, representing ground-up bacilli; then there are the watery extracts of tubercle bacilli used by Maragliano, the filtrates of the culture fluids as used by Denys, and lastly the mystical tulase of Behring. Whatever may be the perfection to which these methods of active immunization may be carried in the future, there still remains the unknown quantity of the capacity of the individual patient to produce the necessary antibodies and bactericidal forces. If these are lacking therapy is powerless to check the disease.

This discussion, brief though it be, has led up to three propositions:

1. Serum therapy is at best a temporary palliative method in infectious diseases which are long drawn out, and which must finally be met by the specific resources of the body itself.

2. The need of discriminating power on the part of the practising physician between individual and individual in the application of remedies which stimulate the production of antibodies. He is evidently not going to be eliminated by an advance in medical science. In fact, he must be better trained than ever, especially in the fundamental principles of immunity — a subject quite new but already rich in acquisitions, which may be called the physiology of the infectious diseases.

3. To each human being are given certain talents to husband and develop and not to squander, for therapy cannot add to them. It falls to the lot of the physician to discover during disease the size of those hidden talents, if he can, and to utilize and manipulate them in the best interests of his patient.

SEPARATE NURSING AND ISOLATION IN TYPHOID FEVER.

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In 1888 Dr. R. H. Fitz[1] demonstrated that typhoid fever was occasionally contracted in this vicinity by patients during their stay in a large hospital, as well as by nurses and other attendants, and he appended a list of directions for the prevention of future contagion, which received universal adoption. Yet cases of typhoid fever thus acquired continue to occur, and it is pertinent to inquire if there are not other practical, preventive measures which might advantageously be employed.

Exposure of patients. — Most private hospitals in this vicinity refuse to accept typhoid patients at all, while others do so only on the condition that the typhoid patient shall have one or more

[1] Fitz: Bost. Med. and Surg. Jour., 1888 vol. lxviii, p. 513.

special nurses. So far as we are aware there is no private hospital in Boston which allows a nurse to attend both typhoid and non-typhoid patients at the same time. Some physicians and more surgeons refuse absolutely to send their cases to a private hospital which receives those ill with typhoid fever, and others prefer that hospital which refuses to treat the disease. Yet all of us — physicians and surgeons alike — have urged patients to enter the large public hospitals, where we knew they would be placed in close contact with typhoid cases in open wards, and cared for by nurses who also had typhoid patients under their charge. Is it justifiable to expose a patient in a large public hospital to typhoid fever any more than in a small private institution? McCrae,[2] in his excellent monograph on typhoid fever, quotes Schuder in the statement that 3.3% of all cases are due to hospital infection. Statistics upon such a point are difficult to obtain, because the average stay of patients in hospitals is so short that the disease does not usually develop until after discharge. We have therefore made no attempt to pursue this aspect of the question. Two striking instances of infection are, however, well known to the writers.

Exposure of nurses. — Frequently nurses are exposed unnecessarily to typhoid fever in large hospitals. It is not uncommon for each of the nurses in a ward to have charge of one or more typhoid patients along with other cases. Thus, on one day recently in one of our larger institutions, twenty-three female nurses, fifteen male nurses and thirteen physicians shared in the care of twenty-eight typhoid patients. These same patients could easily have been gathered into two small wards. Nine nurses and three ward tenders would then have been amply sufficient for their care, and thus the exposure of fourteen nurses and twelve ward tenders would have been avoided. Is this not worth while? If all the typhoid cases in a ward were given to one or more nurses and the non-typhoid cases to the remaining nurses, even then the exposure of the nursing staff would be greatly reduced.

There is little more additional exposure in caring for four typhoid patients than in caring for one. The knowledge that she was a "typhoid nurse" would lead a nurse to redouble the precautions for her own self-protection. The question would not be constantly arising, Is this a typhoid patient? for all would be typhoids and precautions would be the rule of the day and not the readily forgotten exception.

A hospital nurse in Massachusetts is about eight times as liable to contract typhoid fever as the ordinary citizen.[3] During the years 1902–1906 inclusive, we have found that twenty-six nurses contracted typhoid while working in six hospitals. The average number of nurses employed each year in these hospitals was 322 and the total number of cases under their charge, 2,988. In other words, for each 114 cases of typhoid fever treated, one nurse came down with the disease. The typhoid morbidity rate for the nurses in these same hospitals was 161 per 10,000 living instead of 20 per 10,000 living, which is approximately the typhoid morbidity rate for the whole population of the state.

When one considers the danger which nurses now run, it is perfectly plain that, under no circumstances, should a "probationer" ever come in contact with a typhoid case. Further, typhoid nurses should never be overworked, and the greatest pains should be paid to the health of the night attendants.

Ward tenders are particularly prone to typhoid fever for several reasons. Their general education is often not as good as that of nurses, and less attention is paid to their medical training. Of a yearly average of ninety-four ward tenders in five hospitals, twelve contracted typhoid, making the incidence for the five years 252 per 10,000 living; or, in other words, they are nearly thirteen times as subject to the disease as the average citizen.

It cannot be raised as an argument against this plan of concentrated nursing of typhoid patients that the nurses will get insufficient training. That might hold for some hospitals in Germany, where there are few typhoid entries in a year, but not for hospitals in the State of Massachusetts, in which during 1905, 2,794 cases of typhoid fever were reported to the Board of Health. Nor is it in any respect harder to care for several typhoid cases at one time, than for both typhoid and non-typhoid cases. On the contrary, it is far simpler to do strictly typhoid or non-typhoid nursing. The typhoid utensils will all be found in one place, supplies will be made and procured in bulk, and thus many duplicate steps saved. The concentration plan of typhoid nursing for typhoid patients should easily lessen by one-half the number of days of a nurse's exposure to typhoid fever. In the hospital above mentioned it would reduce the exposure by two thirds.

Separate nursing for typhoid patients removes the chief danger to which the other patients are exposed. The "go betweens" are eliminated.

But all such measures are only a make-shift, if the typhoid patients remain scattered about the ward. They should be grouped in neighboring beds. It is true, as Edsall has pointed out, that one typhoid case may harm a fellow typhoid case, but the danger is far less than that of giving the disease to a neighbor weakened by some other disease. Of course, such separation will naturally lead to the giving up of one side or one end of a ward to typhoid cases, and eventually of the whole ward. The isolation of typhoid patients in hospitals, as well as in private houses, was made compulsory in Germany two years ago and the day is not far distant when the unnecessary exposure of patients and nurses to typhoid fever in the United States must cease.

[2] McCrae: Osler's "Modern Medicine," 1907, vol. ii, p. 83.

[3] At the meeting of the Association of American Physicians in Washington, May, 1907, Dr. D. L. Edsall read an instructive paper, not yet published, on typhoid contagion in hospital wards. In general, our data are similar to those he obtained for hospitals in Philadelphia.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

THERE is hardly a day goes by that the daily papers do not give a detailed account of some crime arising from jealousy, and it would appear natural to suppose that on a question so frequently brought up, public opinion and penal science should have arrived at a solution no longer to be disputed. Such, however, is not the case, and there are few subjects in penal law which have been so frequently discussed and will continue to be.

In most cases of so-called "justifiable homicide," the jury will render a verdict of not guilty, and it is quite certain that they cannot be blamed. We have endeavored to discover the reason for this condition of affairs and also problems that "justifiable homicide" brings up. There are three prinicipal ones which deserve attention, the first two belonging to the responsibility of the criminal from passion, the third being the question of the application of the law. Firstly, as to responsibility; should one consider an individual, carried away by his passion, possessed of his mental faculties to their full extent? At the present time we no longer possess the beautiful serenity of our ancestors who divided man into healthy beings and lunatics, the first possessing all their intellectual faculties, especially a stronger will and a mind never clouded; the others, without will, simple machines, always depending upon the physician and never on the magistrate.

The progress of medicine and psychology has taught us that a perfect moral health in man is quite as rare as his perfect physical health. Even outside the realms of characterized pathologic conditions, it is very certain that the will is quite susceptible of a plus or a minus state; man's condition of health, and his nervous system in particular, has a sure influence over his degree of volition, as well as his force of will. If this fact is considered in relation to the other upheld by Gall, who says that in every passion is to be found the starting point of a monomania, one can readily understand how the problem of responsibility is to be put for the criminal from passion. A weak man may become dominated by a passion to such a point that it completely absorbs him and he merely lives for it. In the blindness that his jealousy causes, he wakes up one day to find all things "red," and he strikes.

Should the law take into consideration this intoxication from passion, this instantaneous insanity? The psychologic problem becomes complicated by a moral problem. If passion may thus deprive an individual of his will power to such an extent that he commits a crime, is it not the fault of this man? There was a time when passion had not taken complete possession and when the subject should have struggled against it, he did not on account of presumption and self-confidence. Like Faust, he was desirous of knowing a dangerous unknown, and should he not, like Goethe's hero, pay the price of the future? Should the law be held to appreciate this particular form of responsibility? — a responsibility rather more of a social than a moral one, and consequently quite distinct from that of other criminals. It can be readily understood how complicated the question may become as soon as there is the slightest doubt of the mental condition of the accused, as, for example,— the occurrence is extremely frequent, — when insanity is found in the antecedents of the subject. We here merely indicate the problem.

Another question which comes up, relative to the responsibility of a criminal from passion, is the following: if a person is animated by rage and hatred to such a point as to wish the death of the being that he formerly loved so dearly, the unfortunate outcome is not always entirely due to the criminal, nor to the loved one, but occasionally also to defects in legislation which insufficiently protect humanity. For example, a man having seduced a young girl renders her a mother, and, as soon as he learns of this unfortunate paternity, the seducer abandons his mistress. This is a frequent occurrence, and only too often it has as a consequence to force the unfortunate girl to crime, namely, abortion, suicide, or the murder of her seducer. Beside the responsibility of this woman who murders, which we do not dispute at all, a certain portion of the responsibility is incumbent upon the victim, but is not the law itself at fault for having done nothing, or nearly nothing, to protect this young girl? Is it right that one of the two guilty ones alone should support the consequences of a common fault? Such, nevertheless, is the present condition of our law of man, and in the laudable end to protect the family, it has in reality become the protector of seduction. Certainly one cannot consider justifiable homicide as legitimate, and no one has ever tried to do so, at least of late years, although this opinion has been upheld in former times.

In condemning the accused it seems only reasonable to weigh all the various responsibilities and to diminish that which properly belongs to the accused, that which is incumbent upon society as well as that which is incumbent upon the victim. Admitting the necessity of punishing the perpetrators of crimes from passion one should take into consideration the punishment to be inflicted. This should have a double end to attain; firstly, to frighten future criminals, secondly, to repair the morality of the condemned and to give him back to society in the condition of an honest man. Now, if one rightly understands the effect of intimidation of the sentence relative to crimes from passion, its effect on moralization is hardly understood. In point of fact, it is quite certain that the accused is not, under the circumstances, tempted to commit a second crime, like a robber who recommences his exploits as soon as the occasion offers; and, on the other hand, being a perfectly honest citizen, as far as other points of morality are concerned, prison is for him more dangerous than useful. It would consequently seem that a punishment of a particular kind should be inflicted which

should be purely one of intimidation, without any pretention to correct or to moralize. Consequently, the punishment should be similar in its end and execution to a political punishment.

From this it will be seen that we believe in lessening the legal punishment inflicted on criminals from passion, but we would repeat that we do not wish to convey the idea that we consider "justifiable homicide" as either right or excusable. But on account of the admiration that these crimes have given rise to in the romantic school, as well as the excessive severity of modern theorists, who consider crimes from passion as the most dangerous and the most antisocial of all, should not the attention, as well as pity, be drawn to the particular character of these murderers? The present epoch, which is more skeptic, has lost its taste for drama, and Stendhal would say that we have lost energy, when in reality we have merely become possessed of more good sense.

The punishment is not directed against an abstract crime, but a criminal; that is to say, a being having had his past, his honor and his weaknesses; when the crime is an accidental one, its perpetrator should be separated from the army of vice, which populates the prisons. Criminals for a day, they are the victims of one of the most violent passions which afflict human beings. In our eyes they certainly do not merit impunity, but rather a régime appropriate to their past, and especially to their future. In point of fact, at the present time, this class of criminal usually escapes unpunished, but in law they are murderers like any other.

That crimes from passion can never be made to disappear, no matter what measures may be employed, is evident, because an irresistible desire of cruelty slumbers at the bottom of all love. If, since the origin of the theater, if, from Euripides to Racine, from Shakespeare to the Romantics, murder from love has been the subject of the drama, it is because it responds to the sentiments, to the pain and hatred that all may feel and which are quite as imperishable as the human race.

Before proceeding, it might perhaps be well to ask, What is a crime from passion? An eminent magistrate of Paris replied, when asked this question: "There is no crime from passion, and they are merely called such in cases where the jury acquit the criminal. Or, rather, all crimes are from passion, because all are produced by our passions, such as cupidity, or love, ambition or cruelty." That this reply is sound is evident, because when one reflects it will be seen that there is not a single crime committed when all types of passion are lacking.

The expression, "crime from passion" understood and employed currently, is evidently inexact. Crimes from passion are certainly inspired by passion, but they are like all others as far as this is concerned, because some passion is nearly always the cause of a criminal act.

Public opinion, through the voice of the jury, was the first to make notice of and place apart these crimes, and from this very reason, it is readily understood that this term is neither precise nor scientific. The origin of this term is easily understood when one takes into consideration the current acceptation in ordinary conversation of the word "passion." When one speaks of a passion felt by a man, without defining the nature of the passion, it is always attributed to love. Thus understanding the word passion, one would naturally understand that a crime from passion is a crime of love. This, however, is not entirely so, because one should add that in ordinary crimes, passion is in conformity with personal interests, while here it is the contrary; the robber, counterfeiter, or assassin has a passion for money, for gambling or luxury, but when sifted down, the end attained by his crime is to give him some personal profit, a material benefit posterior to the crime committed.

Quite another affair is the cause which animates the criminal from passion. He is essentially disinterested; forced by the violence of his love or of his hatred, after a struggle of more or less duration, he commits his murder, but the crime once accomplished all is finished as far as he is concerned. He has no future benefit to look forward to; the final end that he proposes is the crime itself, and this may be carried to such a point that frequently, his object accomplished, he takes his own life, or gives himself up to justice. Under these circumstances passion plays a much greater part than in ordinary crimes, and becoming in reality an impulse it would seem that it itself committed the crime. From this truth, which at least seems apparent, public opinion had a vague and confused consciousness, in reality quite just, by giving to these crimes the name of crimes from passion. To sum up, and as much as a popular term can be precise, we will consider under the head of crimes from passion those caused by love, which have an entirely disinterested character, and where the violence of the passion alone urged on a normally honest man to commit a crime.

We have just pointed out that a crime from passion was one produced under certain conditions by love. But it may be questioned how love, which is the principle of life and the preservation of the race, can be a cause of death and how a form of affection may result in hatred. To this it may be said that love is an eminently exclusive sentiment and any division is for it a horror. Jealousy is so much the essence of love that the males of wild animals, even of the kindest types, fight among themselves at the time of fecundation. Civilization has not greatly modified these sentiments in man, and Paul Bourget has said: "*Tous les autres appétits, dit un psychologue contemporain, sont plus ou moins contenus dans les barrières sociales; nous nous battons bien pour le pain, comme nos ancêtres des forêts séculaires se battirent pour un morceau de viande crue, mais c'est sous l'œil des gendarmes, et d'après les conditions fixes du Code. L'amour seul est le demeure irréductible comme la mort aux conventions humaines.*"

Vengeance from jealousy is not always a crime; according to the person who is jealous, his social

rank and his nationality, his vengeance will take on such and such a form. It is sometimes calumny, sometimes a subtle address in creating enemies against the loved and hated person. Or to enter into the domain of jurisprudence, it will often be a denunciation, true or calumnious, perjury and so forth, and the list would never end if one were to enumerate all the forms under which hatred and vengeance appear. In 1903 a witness cruelly charged an accused, and when the presiding judge interrupted, saying, "What you are saying is extremely serious for the accused. Have you no motive for wishing to do so?" He received for a reply from the witness: "Your Honor, I was her lover!" — a sentence which had far more import than he realized.

One of the most tragic vengeances which was executed under the form of a denunciation was certainly that of Eyraud, the assassin. Having taken refuge in the United States, he had completely escaped all the investigations of the police and appeared to be forever under cover until his mistress left him. He wrote to the head of the police department in Paris to denounce them both, and in order to bring his mistress to her loss, he himself brought his head to the scaffold.

Occasionally jealousy manifests itself in its violent and primitive loss by murder. A jealous man becomes brutal and agitated; he cannot suffer the presence of any one near the one he loves. From a quiet and good dispositioned person, the becomes easily angered. Never certain of the fidelity of the one he loves, always doubting and always reassured, he makes her unhappy by his reproaches and becomes odious to her by his love. Finally, a day comes when he can no longer contain himself; he gives himself up to his passion and, if he is weak, he seeks justice by an assassination. Whether or not he has resisted the impulse of his jealousy for a short or long time, no argument can be made against him by saying that he might have continued to resist. This would be quite just if the passion was invariable, but such is not the case. Jealousy always increases or may even undergo sudden attacks of violence. After a time this obsession of jealousy produces a dissolving effect on the will of the subject. An honest man may have the temptation to commit some offence; physicians and moralists are fully in accord on this point, but the habit of an honest life in this man has such a power over him, the disproportion between his entire life and this single idea is so great, that there is not even any struggle on his part. As soon as the idea is conceived it vanishes. On the contrary, what makes the temptation to avenge so dangerous in a jealous man is the permanence of his passion.

Jealousy is a continuous pain, or rather one that returns without cessation; it is not a single one, but is multiple; it takes on the most varied forms, coming to the mind for things which are the most foreign to it. It makes the reasoning false by representing murder as an act of justice. It is not merely a mental deviation, it is more especially a moral pain, or even a physical agony.

The idea of vengeance, born from jealousy, thus little by little increases in intensity on account of the persistency of a state that has been quite aptly called by Moreau de Tours a "dislocation of the will." The condition becomes more irresistible from the fact of its duration, just as a body falling to the ground becomes more rapid in its descent the greater the distance is. Thus may be explained the acts of certain individuals who are quiet and good tempered, who on a certain day show an unheard-of ferocity. The death of their victim does not put an end to their anger and they mutilate the cadaver with blows and cuts. We do not think it reasonable to admit that this rage and cruelty changes the nature of the crime, because the fury is merely a proof of the loss of mental control of the murderer much more than the ferocity of his nature.

Upon other occasions the crime is committed after a long period of "chronic jealousy," and then again, on the contrary, a fury ending in a murder arises suddenly. This jealousy and the crime are, under these circumstances, so rapid in development that the murderer is incapable of explaining his act. As examples, I would mention the following instances: A Parisian paper, *L'Evènement*, Dec. 14, 1876, states that a fearful drama took place two days before. Two friends, X and Z, dined together in company with the wife of the former. After the dinner the two men went to play dominoes at a café. After a short time Z said: "I feel tired; I am going to bed early." X let him go without saying anything, but he felt extremely jealous, fearing that his friend had gone to rejoin his wife. He waited a quarter of an hour and then went home, letting himself in rapidly and surprised Z with his wife. Anger got the best of him, and seizing an axe he rushed upon the seducer. "Stop!" cried his wife, throwing herself in front of her lover. In doing this she received the blow from the axe on the shoulder and fell. She was carried to the hospital and died. The accused in this case was acquitted, although premeditation was fully proven at the trial. The well-known murder of Keyes by Gen. Dan Sickles is also similar; Sickles was acquitted on the ground of "justifiable homicide."

Here, on the other hand, is another case which is an example of pure, spontaneous jealousy. A peasant by the name of Dinan was brought to trial for murder. He had been vaguely jealous of his wife, and in a half joking way had said that "any one found in his wife's bed would meet misfortune." On a certain night he went home and found a man with his wife. Insane with anger he threw himself upon him and beat him to such a point that the man died in the night. In this case also the accused was acquitted.

The following case of murder is a still better example of a sudden attack of jealousy. A butcher boy was the lover of his employer, and it had been understood that he should soon marry her. She was a widow and had a son twenty years of age. She asked her lover to wait a year

before the marriage, so that her son could learn a trade in order to support a family. The woman, as may be seen, was most practical and knew how to conciliate the pleasures of love with the duties of maternity, but, before taking another master, she was desirous of profiting by her liberty and found another lover. One day, when she was returning from the country with the latter, she met her fiancé, who at once took in the situation. He immediately asked her to give him an explanation, but she laughingly replied that she was still free and had no accounts of herself to give to any body. Unfortunately a large butcher's knife was there and her fiancé fell upon her, stabbing her several times; then turning his fury upon himself he endeavored to commit suicide by stabbing himself thirteen times. Taken to the hospital in a serious condition he finally recovered. At the trial the accused was found guilty with extenuating circumstances and was condemned to five years' imprisonment.

It should be pointed out that, in this case, the murderer of a mistress by her lover, of a rival by a lover, or the murder of a husband by his wife, are instances which can ordinarily be proven to be accomplished from jealousy alone. These, however, are not the only crimes from jealousy, but when it is a case of murder of the wife by her husband, of a seducer by his victim, there is another sentiment which becomes combined with jealousy, namely, vengeance of an outraged honor, occasionally defence or vengeance for the children, or even a fear of being ridiculed or one of interest.

Beside these crimes, double suicide from passion should also be considered, because, in the first place, jealousy plays the principal part in these cases, and also especially because between the crime and the double suicide there exist a large number of links which unite them and oblige one to examine them together. At the present time suicide is not punished by law but suicide executed by a third party, that is to say, the murder of an individual who consents to be killed, is punished like an ordinary murder, and these instances frequently give rise to trials. In these suicides it ordinarily happens that one of the parties executes the two murders, and usually it is the man who, in the first place, kills his mistress and then himself afterwards. Now, it may happen that when the murder has been accomplished, the sight of the victim troubles the murderer. The mortal blow was well given in the first case, but when it comes to taking his own life, his hand trembles and he cannot give himself the mortal blow. Then again the blood, the cadaver of his victim and the thought of an approaching end calms the mental exaltation, during which he had conceived the project of committing suicide and he hesitates, is seized with fright and does not kill himself. But he is obliged to appear before justice and give an account of his crime.

What is the motive which may force two beings, who love, to their death and who seem to have every possible reason for wishing to live? This motive can be readily understood when some obstacle opposes the union of the two lovers. Frequently this obstacle is to be found in the opposition of parents who refuse to give their consent to the marriage of their son or daughter, on account of the disproportion of fortune or social rank. Young people who cannot thus be united like better to die together than to live separately. They threaten their parents that they will kill themselves, but the former, having passed the age of great passion and romantic ideas, merely shrug their shoulders and only come out of their incredulity after the death of their children.

On the 31st of August, 1897, a young man and a young woman committed suicide in Paris. When dying the young girl wrote as follows to her parents: "Since I have no hope of marrying him I prefer to die with him. Death will unite us forever. I shall be happy. Above all things do not let any one touch my wedding ring."

On the contrary, it may happen that the parents of the young man will not give their consent, as is shown by the following case, which also took place in Paris. In order to prevent the marriage of their son, which they disapproved of, they made calumnious statements relative to the young woman, and when this came to the girl's knowledge she wrote his parents before dying: "To prove to you that I am not a woman belonging to all men, I am going to die with my Léon, because I love him and cannot live without him."

In this last case it would appear quite evident that the suicide had been wished for by the young woman in the first place, but that by jealousy she forced her lover to kill himself. This supposition was confirmed by a letter in which the young man took particular care to defend the memory of his fiancée from this accusation.

(To be continued.)

Clinical Department.

REPORT OF A CASE OF FRACTURE INTO ACETABULUM WITH SEPARATION AT SACRO-ILIAC SYNCHONDROSIS WITHOUT CLINICAL SYMPTOMS.

BY JOHN D. ADAMS, M.D., BOSTON.

THIS case is interesting through the inconsistency of its clinical aspects to the x-ray findings.

A girl, nineteen years old, was struck and knocked down by an automobile going fifteen miles an hour. She was pulled out from under the car and carried into a neighboring store. She was seen ten minutes after presenting the following picture:

Conscious, pulse 120, complaining of pain in left side from hip down to foot.

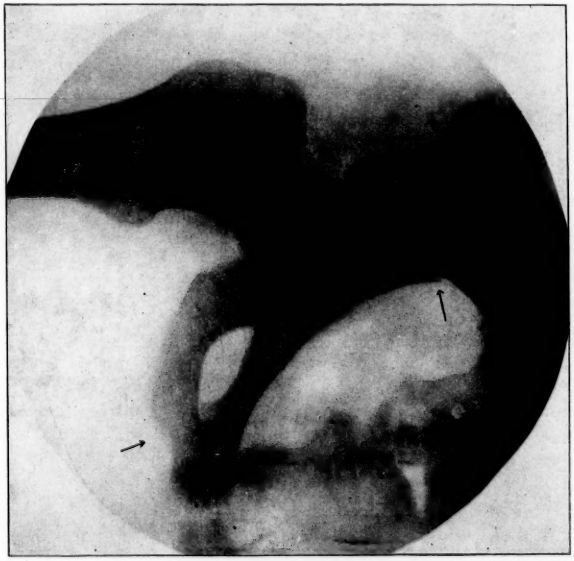
Examination. — Abrasions on left side with contusion of left hip; motions of left leg somewhat painful; no muscular spasm; no evidence of fracture or dislocation. Walked with limp but with ability to use leg; no limitation of motion in joint; reflexes normal. Acute retention for twenty-four hours. Hyperesthesia over area supplied by lower sacral nerves.

Forty-eight hours later, after rest in bed, was able

to get out of bed and suffered no inconvenience in walking except from general muscular soreness; no limitation of motion at hip-joint; area of hyperesthesia entirely cleared up. Kept in bed.

Five days after the accident the accompanying x-rays were taken by Dr. A. W. George showing a fracture into acetabulum with separation at sacro-iliac synchondrosis.

Plaster jacket applied to pelvis and kept quiet for ten days, at the end of which time jacket removed and examination showed absolutely no disability as evi-



Arrow shows fracture into acetabulum. X-ray taken by Dr. A. W. George.

exist, both incisions are made meeting at the base. The anterior fragment is first made to overlap the posterior, and then the upper portion including the anterior portion is made to overlap the basal portion. This forms a double locking. If the deflection extends into the bony septum the bony deflection is easily broken and replaced with forceps. If the septum is thickened below the horizontal angle the thickened base which protrudes into the formerly obstructed naris should be dealt with as are spurs, etc. If the septum is thin in the lower part and projects unduly into the naris it may be broken into a perpendicular position in line with the upper portion, thus increasing the overlap and making the septum more firm, the bony base soon uniting by bony union. The author passes into the formerly obstructed side a folded piece of antiseptic gauze long enough to extend the length of the former deflection and about one third to half an inch wide, thick enough to pass easily. This should be changed every three or four days until healing is complete, — about four weeks. The instruments used are a

case of a large tumor of the pharynx occurring in a woman of fifty-one years, who at her thirty-sixth year had a grippal attack leaving her hoarse. At the forty-fifth year the breathing became labored, being much worse at night. Two years later she began to choke on particles of food, to have increased dyspnea, difficulty in sleeping, severe headache and vertigo. In her fifty-first year she came under the reporter's observation. A large mass was found to completely fill the laryngo-pharynx, pressing the epiglottis forward

before the marriage, so that her son could learn a trade in order to support a family. The woman, as may be seen, was most practical and knew how to conciliate the pleasures of love with the duties of maternity, but, before taking another master, she was desirous of profiting by her liberty and found another lover. One day, when she was returning from the country with the latter, she met her fiancé, who at once took in the situation. He immediately asked her to give him an ex-

proaching end calms the mental exaltation, during which he had conceived the project of committing suicide and he hesitates, is seized with fright and does not kill himself. But he is obliged to appear before justice and give an account of his crime.

What is the motive which may force two beings, who love, to their death and who seem to have every possible reason for wishing to live? This motive can be readily understood when some obstacle opposes the union of the two lovers. Frequently this obstacle is to be found in the opposition of parents who refuse to give their consent to the marriage of their son or daughter, on account of the disproportion of fortune or social rank. Young people who cannot thus be united like better to die together than to live separately. They threaten their parents that they will kill themselves, but the former, having passed the age of great passion and romantic

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Plaster jacket applied to pelvis and kept quiet for ten days, at the end of which time jacket removed and examination showed absolutely no disability as evidenced by limitation of motion, spasm or limp.

Four months after accident examination showed absolutely nothing abnormal.

This case demonstrates very clearly the importance of x-ray in diagnosis as, without doubt, this fracture would have gone unrecognized without x-ray as the case presented no clinical symptoms indicative of its existence.

Reports of Societies.

TRANSACTIONS OF THE TWENTY-NINTH ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

HELD AT WASHINGTON, D. C., MAY 7, 8 AND 9, 1907, IN CONNECTION WITH THE SEVENTH TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

(Concluded from No. 12, p. 403.)

THIRD DAY (continued).

STRAIGHTENING THE NASAL SEPTUM.

DR. A. W. WATSON, of Philadelphia, Pa., discussed this question with special reference to the operation devised by him several years ago. It was his view that when a septum could be put in proper place without resection, the patient was better off than if the septal framework had been removed. The methods of his operation for which he claimed originality were the overlap and the beveled, incision. This procedure was applicable to the vast majority of cases. In every case the two conditions to be met and overcome are resiliency and redundancy of tissue. The author thus described his operation: incision on convex side of septum from behind forward just beneath the angle of deflection, following the angle to its anterior extremity and then curving upward for a short distance. This cut should be beveled, and by preference is *not* carried through the mucosa of the concave side. The upper part of the septum is then pushed over the lower portion into the opposite side, thus overlapping the lower portion. If the angle is perpendicular the incision is then made behind the angle, the bevel being from behind forward. An incision is also made at the base forward from the first incision forming a triangular flap. The posterior edge of the anterior portion is then pushed over the posterior portion. If as is frequent, both horizontal and perpendicular angles exist, both incisions are made meeting at the base. The anterior fragment is first made to overlap the posterior, and then the upper portion including the anterior portion is made to overlap the basal portion. This forms a double locking. If the deflection extends into the bony septum the bony deflection is easily broken and replaced with forceps. If the septum is thickened below the horizontal angle the thickened base which protrudes into the formerly obstructed naris should be dealt with as are spurs, etc. If the septum is thin in the lower part and projects unduly into the naris it may be broken into a perpendicular position in line with the upper portion, thus increasing the overlap and making the septum more firm, the bony base soon uniting by bony union. The author passes into the formerly obstructed side a folded piece of antiseptic gauze long enough to extend the length of the former deflection and about one third to half an inch wide, thick enough to pass easily. This should be changed every three or four days until healing is complete, — about four weeks. The instruments used are a straight knife like a tenatome and the same with a blade at an obtuse angle. These suffice for the horizontal incision. For the perpendicular incision a knife with a small blade bent on the flat almost to a right angle and sharp on both edges. The forceps are a modified Adams, the fenestrum being lengthened to an inch and a quarter so as to reach any part of the bony septum.

DR. A. A. BLISS, Philadelphia, had had much satisfaction with the Watson operation. Sub-mucous resection was being overdone. For the angular deflections the Watson operation was preferable.

DR. EMIL MAYER would also commend the Watson operation for angular deflections. He would like to lay stress on the matter of freshening the edges of the floor on the concave side after having performed the operation on the convex side. This gives a double opportunity for holding the part pushed over into the concavity. He preferred hard rubber tubes to gauze for packing. No one operation sufficed for every case.

DR. W. E. CASSELBERRY asked if it was not possible to obviate the second operation sometimes called for, namely, the removal, as we would take off a spur, of the thickening along the long part of the horizontal cut protruding into the naris of the convex side after healing. The Watson operation could be done quickly, efficiently and without difficulty. He preferred to operate under general anesthesia.

DR. WATSON stated that by preference he went through the mucosa of one side only but this restriction was not always possible.

DR. L. BALLENGER, Chicago, thought that if we could save the framework of the septum it was most advisable to do so. He had one sinking in of the nose after a sub-mucous operation, not having made due allowance for the chondritis undoubtedly following the injury.

DR. R. C. MYLES referred to the various operations devised during the last few years. Submucous operations were not free from danger, as he knew of two cases resulting fatally. The deeper the operation on the bony septum, the greater the element of danger. He thought the perpendicular plate of the ethmoid a very difficult thing to handle.

DR. J. SOLIS-COHEN made comparisons between the mechanical principles involved in the Watson and in the Gleason operations. He had seen serious cerebral effects follow the latter.

Discussion was closed by DR. WATSON.

LARGE TUMOR OF THE LARYNGO-PHARYNX REMOVED BY SUBHYOID PHARYNGOTOMY.

DR. W. F. CHAPPELL, of New York City, reported the case of a large tumor of the pharynx occurring in a woman of fifty-one years, who at her thirty-sixth year had a grippal attack leaving her hoarse. At the forty-fifth year the breathing became labored, being much worse at night. Two years later she began to choke on particles of food, to have increased dyspnea, difficulty in sleeping, severe headache and vertigo. In her fifty-first year she came under the reporter's observation. A large mass was found to completely fill the laryngo-pharynx, pressing the epiglottis forward

against the root of the tongue and laterally touching the pharyngeal wall. Posteriorly it extended downward some distance and it was difficult to see how the patient could breathe or nourish herself. The laryngeal interior could not be seen. The surface of the mass was covered with large tortuous vessels. A low tracheotomy was done under cocaine. Later an effort was made to remove the growth with a cold wire snare but adhesions prevented. The solid nature of the tumor was determined by introduction of a curved scalpel. A subhyoid pharyngotomy was then done. The pedicle was found close to the left ary-epiglottic fold and was tied off with a silk ligature. The circumference of the mass was four and one-half inches, and it was found to consist of fibrous tissue very moderately supplied with nuclei and round cells. The patient made a good recovery. Difficulty in nutrition caused some scorbutic symptoms but these were promptly relieved by fruit acids. The reporter had found records of eleven similar growths.

PLEA FOR LOCAL ANESTHESIA IN OPERATIONS ON THE MAXILLARY SINUS.

A paper with this title was read by DR. GORDON KING, of New Orleans. He took the position that we ought to minimize the dangers of anesthetics as much as possible and that we ought consequently to employ local instead of general anesthesia whenever and wherever possible. In operations around the mouth and pharynx, general anesthesia caused annoyance and delay from nausea and vomiting, inhalation of blood secretions into the larynx and frequent interference with the administration of the anesthetic. The author was led to employ local anesthesia in antrum operations two years and had used them only since that time. He is a loyal adherent of the Caldwell-Luc operation and has been able to finish it in less than twenty minutes. He swabs the mucosa briskly with a 10% cocaine solution, and when the area has become insensible to the needle point, he injects a solution of 2% strength with 1-2000 adrenalin along the line of incision, at first superficially into the submucous tissue and later into or under the periosteum. This done, incision is made down to the bone and the periosteum elevated until the exact situation of the infra-orbital foramen can be made out when, to insure perfect and widespread anesthesia, a few drops of the solution are injected into or around the trunk of the infra-orbital nerve at its point of exit. He finds it prudent not to lay bare the nerve itself as this may lead to post-operative neuralgia or neuritis. The bone being sufficiently exposed to allow of easy access to the antral cavity, the latter is opened with a chisel or electric burr when several drops of 10% cocaine and some adrenalin are introduced into the cavity which is then swabbed by means of a cotton carrier. A few minutes must be allowed at this point for absorption of the solution, and the time may be utilized by applying a pledget of cotton saturated with the solution under the inferior turbinate where the counter-opening is to be made into the nose. The antrum is then curetted, the counter-opening made and the buccal wound sutured. Adrenalin lessens the blood flow and prolongs the effect of the cocaine while offsetting the toxic tendency of the latter. The author has followed the foregoing plan in some 15 cases and with most satisfactory results. In two instances he has performed the radical operation on the frontal sinus under local anesthesia, but here the results have not been so satisfactory, as this region is more sensitive and less susceptible to thorough cocainization.

DR. R. C. MYLES stated that he had operated on 200 antral cases during the last fifteen or twenty years, but that during the last eight or ten years not more than 2% of the operations were done under general anesthesia. He had gradually diminished the strength of the cocaine solution until now he rarely used more than ¼%. The operation was practically painless unless we got near some dental nerve. Water, by its pressure on the nerves, sometimes gave as good anesthesia as did cocaine. Of late years he had preferred the nasal route, introducing a light platinum needle under the inferior turbinate and then introducing the cocaine and adrenalin through the opening thus made, for the most of the pain was in the antral mucosa. He did not believe in putting the cocaine on a region on which he did not intend to operate and therefore considered it unwise to spray it indefinitely. He knew of several deaths from general anesthesia. They were more than published reports would lead us to believe.

DR. W. E. CASSELBERRY could also commend the use of local anesthesia for these operations. He had not been able, however, to operate as quickly as had Dr. King. The injection of some of the solution into the region of the infra-orbital nerve, as had been suggested by Dr. King would doubtless be a very useful addition to the procedure.

In closing the discussion Dr. King said that local anesthesia facilitated the operation. It avoided all the objections which arise from the use of a general anesthetic in operations about the mouth. After an opening was made into the antrum, a 10% solution could be injected and by the time the antrum was thoroughly opened it was insensitive to pain. A still stronger solution could be swabbed on the interior surface of the cavity.

MYXO-FIBROMA OF THE NASO-PHARYNX.

After some general observations on tumors of this nature occurring in the naso-pharynx, DR. D. BRADEN KYLE presented a specimen removed from a man of twenty-four years who complained of inability to breathe and of almost continuous pain or aching in the region of the frontal sinus or over the bridge of the nose. On the right side a mass almost protruded from the naris. The mirror outlined a mass in the naso-pharynx but it did not extend below the margin of the soft palate. There was considerable catarrhal discharge but no evidences of sinus or ear trouble. A distinct swelling was evident at the inner corner of the right eye. The left naris was occluded owing to pressure of the tumor on the septum. The mass was removed without difficulty, and six weeks later the patient was in good condition with both nares of practically the same size. The interesting points in the case were the site of origin, at the posterior end of and under the superior turbinate, the symptoms of nasal occlusion by septal pressure, the fact that the growth did not follow the path of least resistance, the practical absence of hemorrhage, the pedunculated nature of the mass removed, the absence of ear and sinus involvement. The bony septum seemed to have been softened by the pressure and inflammatory process. It was easily forced back into the median line by the nasal dilator and remained in position without the aid of splints.

DR. JOHN W. FARLOW stated that one symptom in a patient of his and not present in that of Dr. Kyle was a change in the voice. The growth was larger even than in Dr. Kyle's case. The character of the voice changed immediately after the tumor was removed. His patient had formerly pronounced the letter *m* as *b* but as soon as the growth was removed the *m* came out very clearly.

DR. A. W. WATSON had had a similar case in which the circumference of the growth was about six inches. It had involved both sides of the septum and extended

into one antrum producing some facial protrusion on that side. The large mass filling the naso-pharynx was removed with the snare. The entire vault of the pharynx was covered, however, with similar material and was reproduced as fast as it was cleared away, but under the influence of electric needles it began to diminish and finally ceased growing.

Dr. Gordon King had recently removed a myxo-fibroma as large as a hen's egg and found the site of attachment to be the ala of the nose.

Dr. William Lincoln, Cleveland, said that not all cases were so favorable as was that of Dr. Kyle in regard to distribution of blood vessels. In a recent case of his own, snares and forceps were useless and he was obliged to remove the nose on one side, lay it over on the face and so gain free access to the tumor. Adhesions were separated with the spatula and the cautery used. In removing the nose he had cut in on the sound side so that the inevitable suppuration was discharged not through the wound but into the pharynx. The mass projected into the naso-pharynx and needles were used here, as explained by Dr. Watson.

Dr. J. N. Mackenzie gave the history of a case illustrating the occasional impossibility of removing these tumors through the internal passages. They might become rooted in many places. In one instance he had been compelled to turn the patient over to the general surgeon who did a modified Langenbeck operation dissecting out the growth in that way. Severe hemorrhage accompanied the procedure.

Dr. W. E. Casselberry said that the tumor mentioned by the last speaker was probably a fibroma, while Dr. Kyle had spoken of myxo-fibroma which was quite another form of neoplasm. The two conditions should not be confused because the treatment of one was entirely different from that of the other.

Dr. Kyle, in closing the discussion, said that it was difficult to see why such soft growths should cause so much bony displacement.

Epithelioma of the Tongue; Early Diagnosis; Operation; Recovery.

The history of the case was presented by Dr. Robert C. Myles, of New York, whose patient was a man of sixty-four years, who had been annoyed for a few weeks before coming under observation by a sensitive spot on the left side of the tongue, a little in front of the insertion of the palato-glossus muscle. At this site there was a small, hard and roughened area suggesting malignancy. Iodides were tried without avail and operation was decided on. This was done by Dr. J. A. Bodine who thoroughly dissected out all the superficial and deep cervical glands and also the submaxillary, salivary and sublingual glands and much of the connective tissue along the jugular vein and carotid artery in order that many of the small undetectable lymphatics might be removed. Then, with heavy scissors, section was made of the affected area in healthy tissue at a distance of from one half to three quarters of an inch from the margin of the growth. It was necessary to sever the left palato-glossus muscle and parts of the genio-hyo-glossus, stylo-glossus, hyo-glossus and lingualis. This caused the tongue to curl upward at the tip and to fall back on the epiglottis at the left base. The patient made a good recovery from the operation which was done six months ago. The microscopist reported that the growth removed was a squamous-celled carcinoma. The glands removed were somewhat inflamed but showed no metastases.

Dr. J. H. Bryan, Washington, was very much interested in the subject of cancer of the tongue, and related the histories of two personal cases under his recent care. The fate of the patient depended on the early recognition of the disease. The cases should be recognized in the pre-cancerous stage. Recurrence sometimes occurred on the side opposite to that of the original disease because of the richness of the tongue in lymphatics, the circulation of which the raphe was not able to shut off. The glands ought to be excised on both sides.

Dr. J. N. Mackenzie said that the Baltimore surgeons believed that the whole floor of the mouth ought to be excised.

Dr. George E. Shambaugh, Chicago, said that he had had a recent case of cancer of the neck which seemed to him to be rather unusual. He thought that the development of the tongue explained it. The anterior part of the tongue developed in halves while the back part developed as a central piece.

Dr. Myles closed the discussion.

At the closing executive session it was announced that the retiring President, Dr. de Roaldes, had offered the Association five hundred dollars for the establishment of a prize fund. This offer was gratefully accepted and it was voted to attach to the fund the name of the donor.

The following gentlemen were elected to membership: For Honorary Fellow, Prof. Leopold Von Schroetter, of Vienna (transferred from the list of Corresponding Fellows). Active Fellows: Dr. Joseph S. Gibb, Philadelphia, Pa., proposed by Drs. Lincoln and Packard. Thesis, "Is there an Ideal Operation for the Correction of Deviations of the Nasal Septum?" Dr. Christian R. Holmes, Cincinnati, Ohio, proposed by Drs. Kyle and Mayer. Thesis, "Pyogenic Diseases of the Accessory Sinuses of the Nose and the Etiology of Facial Erysipelas, Including Secondary Effects upon the Eyes." Dr. Chevalier Jackson, Pittsburg, Pa., proposed by Drs. Freer and Harris. Thesis, "Ligation of the External Carotid Artery from the Pharyngo-rhinologic View Point; Report of Cases." Dr. George E. Shambaugh, Chicago, Ill., proposed by Drs. Rhodes and Casselberry. Thesis, "The Architecture of the Ethmoid Labyrinth." The election of officers for the coming year resulted as follows: President, Dr. Herbert S. Birkett, Montreal; First Vice-President, Dr. J. Payson Clark, Boston, Mass.; Second Vice-President, Dr. J. Edwin Rhodes, Chicago, Ill.; Secretary and Treasurer, Dr. James E. Newcomb, 118 West 69th Street, New York City; Librarian, Dr. Joseph H. Bryan, Washington, D. C.; Member of Council to serve for four years, Dr. A. W. de Roaldes, New Orleans, La. The determination of date and place for the next Congress will be decided by the Council. The meeting was the largest in the history of the Association.

Book Reviews.

Surgical Instruments in Greek and Roman Times. By John Stewart Milne, M.A., M.D., Aberdeen; Keith Gold Medalist in Clinical Surgery. With illustrations. Oxford: at the Clarendon Press. 1907.

This is a gem of a book, in refreshing contrast to many of the commercial productions with which the publishers are flooding the medical-book market. It is original, sincere and thorough. The author, a young man and a recent graduate in medicine, has devoted six years to

the collection of his material and gives us this monograph as the thesis which formed part of the examination for the degree of M.D. of the University of Aberdeen. It was successful in gaining "Highest Honors." One must believe the writer to be an accomplished linguist, with a familiarity with languages ancient and modern far greater than we see in the average medical graduate. He has read searchingly, and in the original, the works of Hippocrates, Celsus, Aretæus, Galen, Oribasius, Soranus, Aëtius, Paul of Egina and dozens of others, — Greek, Latin, Arabic and medieval writers, while he acknowledges modestly his deep obligation to the distinguished English scholar, Francis Adams. The writing is so thorough and convincing that one feels we have among us again an English-speaking medical historian of the first rank. And Milne is evidently not only an historian but an accomplished physician.

The author divides his book into eleven chapters and two appendices, with a satisfactory index — English, Latin and Greek. He recalls for us, first, the famous surgeons of antiquity, glancing hastily at some of their contributions to our art and describing the instruments which they enumerate. It is an interesting fact that recent excavations and discoveries have now put into our hands material for such a book as this, for Milne explains that Adams, writing sixty years ago, was unable to account satisfactorily for many of the instruments he describes, because sixty years ago the actual instruments had not been discovered to illustrate and make definite such writing. Truly, as the author states, comparatively little attention has been given to this department of archeology. Whatever literature we have is entirely continental and consists of a series of reports of different finds, with attempts to indicate the uses of the instruments described.

Every chapter of Milne's book bristles with novel and refreshing information. One learns with keen interest how both the Greeks and Romans made their instruments of finely tempered steel as well as of the more common bronze. Unfortunately, while the bronze has survived, most of the steel has been oxidized and has disappeared. The ancients used ores of a high quality, and we are told of the heaps of scoriæ left in the Forest of Dean by the Roman founders, — refuse which contains so large a percentage of iron still remaining that the scoriæ were melted over again in later times and occupied more than twenty furnaces for two hundred years.

The ancients used bronze — a mixture of copper and tin — for many instruments, especially for instrument handles, for ornamentation and for instrument and medicine cases; and they employed other metals as well as horn, wood and stone for appropriate utensils.

The most prolific sources of finds are the excavations at Herculaneum and Pompeii, but there are numerous others of less richness throughout Italy, France, Greece, and even Germany, for we learn that so lately as 1893 important excavations in the Roman military hospital at Baden resulted in an extensive find.

Space does not allow a detailed description of the ancient instruments, but one notes especially the character of the operating knives with blades of steel and handles of bronze, the nearer end of the handle ornamented with a leaf-shaped spatula to act as a blunt dissector much like the useful knife which J. Collins Warren recently has popularized. Knives were of all shapes and varieties from the long amputating blade to the delicate instrument used for plastics of the eyelid. There were shears and scissors also; and there were probes and specula, especially of the tri-valve type as Milne shows in his interesting illustrations. (Recently this reviewer saw a model of a Pompeiian trivalve speculum in the possession of Roswell Park.) The specula, probes and knives with their uses are graphically described by the author, though the modern surgeon shrinks at a rehearsal of elaborate operations performed without anesthesia or asepsis upon such organs as the brain and intestines. Few books bring before us so clearly the details and terrors of that ancient surgery. We read also of the needles and bodkins of Hippocrates, of uterine sounds and dilators, of blunt dissectors and curved hooks, and of forceps of great variety. One is interested to learn that the common form *Vulsellum* finds no authority in classical usage, for the Romans wrote *Vulsella*, — æ feminine. Bleeding cups and clysters have less interest for modern readers, though the custom of cupping is mentioned in the Hindoo Vedas; but we read of the syringe, commonly constructed of a leather bag, armed with a metallic tube, a form which held its own until the early part of the nineteenth century. Cauteries were in common use and were made of iron, *ferrum candens* being the familiar term. There were elaborate bone and tooth instruments, rongeurs, chisels, gouges, drills, saws, trephines, heavy bone-forceps, files, scoups and numerous other instruments, coarse and fine. Milne devotes an interesting chapter to the gynecological instruments of the ancients. There is no evidence that they used obstetric forceps, but they had instruments for destructive operations upon the child, and they employed uterine sounds, curettes and pessaries. Hippocrates and Antyllus describe methods of disinfecting with steam the uterus and vagina in septic cases. The ancients used sea sponges fresh, with the smell of the sea upon them, and dipped in wine. Galen tells how he has checked hemorrhage by applying a sponge dipped in asphalt to a bleeding wound and setting fire to it, leaving the unburned part to cover the wound. The Greeks and Romans employed sutures commonly, made usually of flax or wool, sometimes of human hair. They used also metal clasps and bands to unite broken bones and severed soft parts.

Such are the subjects with which the author deals, and he tells his story pleasantly and lucidly, illuminating his text with many pictures. Our JOURNAL readers should turn aside and devote an evening to this delightful book.

Manual of Anatomy, Systematic and Practical, Including Embryology. By A. M. Buchanan, M.A., M.D., C.M., F.F.P.S. Glas., Professor of Anatomy in Anderson's College, Glasgow, Examiner in anatomy for the triple qualification of the Scottish licensing bodies, etc. Vol. II. Pp. 1539. Illustrated. Chicago: W. T. Keener & Co. 1907.

In our issue of Dec. 6, 1906, we reviewed the first volume of this work on anatomy. The second volume has now appeared, including a discussion of the abdomen, thorax, head and neck, nervous system, organs of special sense, together with an appendix containing the Basle nomenclature and a glossary. Naturally the method of presentation adopted in the first volume has been continued in this, the most notable feature of this arrangement being that the development of organs and structures is considered with the general descriptive anatomy. The book is amply illustrated, as was its predecessor, and colors are freely used. The paper is good and the type clear. We again call attention to the flexible buckram covers, which, if soiled during use, may be cleaned with a moist sponge. From a practical and esthetic standpoint this should appeal especially to the student who continuously uses the book in the course of dissection. In general the book will take its place among others of high rank in the science of which it treats.

Foods and Their Adulteration. Origin, Manufacture, and Composition of Food Products; Description of Common Adulterations, Food Standards and National Food Laws and Regulations. By Harvey W. Wiley, M.D., Ph.D. With eleven colored plates and 86 other illustrations. Pp. 625. Philadelphia: P. Blakiston's Son & Co. 1907.

In this work, the author, who is chief of the Bureau of Chemistry, of the United States Department of Agriculture, and who has been humorously described in the secular press as the "janitor of the people's insides," has brought together a mass of interesting information concerning the many articles of food of mankind, and has illuminated it with sidelights from his own very interesting personality. Although in his introduction he says: "The American public is now so well educated that any average citizen is fully capable of understanding scientific problems if presented to him in a non-technical garb," he appears to deem it necessary to inform his readers that "soups are generally used at the beginning of a meal, usually at dinner time"; that "lard has come to be looked upon as a necessity in every kitchen, even of the humblest citizen"; that "both hens and roosters are used for food purposes, but especially the young roosters are devoted to food purposes, while the young hens are often [yes, very often] kept for the production of eggs"; that "for food purposes the chicken is eaten at various ages"; that "the principal domesticated fowls which are used for human food are chickens, turkeys, ducks and guinea hens," and that "lard is sometimes [!] employed for the purpose of cooking by the process of frying"; furthermore, to this well educated public he takes pains to make clear the difference between veal and beef, lamb and mutton, pig and pork, and to explain that the "eggs which are principally used for food" are those of the domesticated fowl, chiefly "chickens, ducks and geese." When told that "fish are known chiefly by their common names," the irreverent might truly ask by what other name than those could they be chiefly known. We doubt that but for this work it would have been known that "the size of the fish usually depends upon the magnitude of the body of water in which the species grow," and cannot but feel grateful for the citation of at least one exception — "The size of the whitefish in the Great Lakes is not so great as the extent of water would indicate." One may be moved to inquire why whitebait, smelts and flounders, which are indigenous to the Atlantic, are so much smaller than whitefish from Lake Superior, which in its magnitude is so vastly inferior to the ocean. But now we know, at least, why brook trout do not approach in size the sturgeon and horse mackerel and why shiners are unequal to halibut,— the magnitude of the bodies of water in which they grow is inadequate.

The author's principal obsessions appear to be the use of artificial colors and misbranding. All colors, however innocent their nature, and notwithstanding the sanction of long usage, should be barred. The coloring of winter butter is "reprehensible"; the coloring of factory cheese is "reprehensible"; all coloring is fraudulent and "reprehensible." Misbranding is even worse. What can be more wicked than calling herring, boxed on the coast of Maine and sold at a few cents per box, "sardines"? What punishment can fit the crime of making a cheese in Ohio and labelling it so as to convey the impression that it was produced in New York? These are far from harmless frauds. Lima beans should come exclusively from Peru and Brussels sprouts from Belgium!

In the kitchen our author is especially refulgent. Clam soup is made of clams, milk, cream, flour, and condiments; put in more clams and some potatoes and we have clam chowder.! That sort of chowder may pass in Kent County, Ind., but not in the habitat of the clam.

Throughout the work appears constantly a plea for Federal inspection — "municipal, state and Federal inspection" — by experts, and especially Federal experts, of which the author is the acknowledged chief.

The book is copiously illustrated — 11 colored plates and 86 figures, taken mostly from Farmer's Bulletins and other documents distributed during the past fifteen or more years by the Department of Agriculture. Of the 11 colored plates, 7 are "reproduced by courtesy of Armour & Co., Chicago." Apart from the impropriety of the director of the Federal inspection force placing himself under any obligation whatever to a con-

cern whose methods were for a time a stench in the public nostrils and whose canned products as sold in Massachusetts were shown by the State authorities, a year ago, to need that "municipal, state and Federal" inspection which the author advocates so warmly, it is to be wondered why these plates were introduced, for although the author says, "By comparing the appearance of the beef bought in all markets with these plates it is possible to form a sound judgment of their suitability for consumption," they teach nothing whatever of the sort and serve no purpose other than padding; and this may be said also of a large proportion of the illustrations in general, including the 7 out of nearly 100 contributed by the author and not borrowed from other works.

Although credit has been freely given for the illustrations, it is otherwise regarding tables and facts, and the author appears to be guilty, too, of more or less "faking," an example of which is giving Storch's figures for a buttermilk standard, although without credit, and filling in the space for acidity, which Storch fills with an interrogation mark, with a figure from a similar table by Vieth. On the whole, in spite of its blemishes, the book will serve to some extent a useful purpose.

The Eye and the Nervous System: their Diagnostic Relations. By various authors, edited by WM. CAMPBELL POSEY, A.B., M.D., and WILLIAM G. SPILLER, M.D. 8vo, pp. xii, 988. With 239 illustrations and 13 plates, 8 of which are colored. Philadelphia and London: J. B. Lippincott Co. 1906.

Oppenheim's dictum, that he who cannot use the ophthalmoscope is no neurologist, although not yet fully recognized, is only a part of the truth. The neurologist needs a far wider knowledge of the eye and its functions than can be obtained solely by the ophthalmoscope, but, unfortunately, such knowledge is only too often lacking and our medical curricula fail to insist upon it as a preliminary to the study of neurology. It is equally true that the ophthalmologist should have an accurate knowledge of the functions and diseases of the nervous system. Any work, therefore, which tends to bring together these two branches of medicine is welcome. In the plan of such a work two principles may be adopted: the plan may be based upon the eye itself, studying its functions and noting the significance of their alteration in diseases of the nervous system, or it may be based upon the nervous system, studying the individual diseases and noting the eye symptoms occurring in them. The former plan is certainly to be preferred. Optic neuritis, abducens paralysis, or an Argyll-Robertson pupil is a natural starting point for inquiry, whereas paralysis agitans, cerebral hemorrhage or trigeminal neuralgia rarely is attended with ocular symptoms worthy of note. The editors of the present work, however, have adopted neither of these nor any definite plan, but have divided the book into various chapters which do not form part of one consistent whole but seem rather designed to hold an even balance between the neurological and ophthalmological contributors. The result is that, like most of the composite works that are forced on us by zealous publishers, the book is without plan, and contains much that is irrelevant. Some contributors give a good account of certain nervous disorders, with perhaps an incidental mention of the ocular symptoms; others limit themselves closely to an exhaustive consideration of the ocular symptoms, and the ocular symptoms only, that occur in the diseases treated. The book contains no diagram showing the relations of the optic fibers in connection with hemianopsia, yet it contains elaborate chapters on the wholly irrelevant questions of nerve anastomosis in facial paralysis, the Gasserian ganglion operation for tic douloureux, tremors, reflexes and gaits. The great question of the etiological importance of eye-strain is left almost wholly to ophthalmologists, who take a somewhat extreme view of the subject, although they do not endorse wholly the teachings of Ranney and Gould. It is a great pity that the question was not more fully discussed from the neurological standpoint. Nevertheless the book, despite its lack of plan and its poor arrangement, despite too the uneven merit of all composite works, contains some chapters of extreme value, some that are merely commonplace, but on the whole very much that both the neurologist and ophthalmologist will find indispensable, although the inevitable comparison with the great work of Wilbrand and Saenger is decidedly against the volume before us. The index is very unsatisfactory.

Space is lacking to consider each contribution separately, but we will add the list of contributors, with their respective subjects. W. G. Spiller writes on the anatomy of the cranial nerves; W. N. Souter on the structure and optical properties of the eye; C. K. Mills on the psychology of the visual act and the focal diseases of the visual cortex; C. A. Wood on the external examination of the eye; Alexander Duane on the extra-ocular muscles; J. E. Weeks on the intra-ocular muscles; Edward Jackson on affections of the fifth, seventh and cervical sympathetic nerves; H. V. Würdemann on diseases of the retina and optic nerve; W. G. Spiller on tumors of the brain; E. W. Taylor on bulbar and pseudo-bulbar diseases; Wm. Hirsch on arteriosclerosis, multiple sclerosis, Friedreich's disease and paralysis agitans; F. X. Dercum on parasyphilitic diseases, insanities and toxic encephalopathics; B. Sachs on amaurotic idiocy and cerebral infantile paralysis; C. W. Burr on acromegaly, abnormalities and hemiatrophy; T. H. Weisenburg on diseases of the spinal cord and nerves; G. E. DeSchweinitz on hysteria and other neuroses; J. H. Lloyd on ingrains, epilepsy and tetanus; S. D. Risley and H. F. Hansell on eye-strain; W. C. Posey on exophthalmic goitre and the psychological effects of operations on the eye; C. H. Frazier on the surgical treatment of intracranial lesions causing disturbances of vision; Joseph Sailer on tremors, reflexes and gaits; and G. L. Walton on degeneracy.

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DEATH OF DR. JAMES CARROLL.

The death of Dr. James Carroll should not be allowed to pass with merely a perfunctory notice of his career. He belonged to that small class of men who are willing to undertake a most serious personal risk in order to demonstrate the truth or falsity of a theory. To permit himself calmly and with full knowledge of possible consequences to be bitten by a fever-infected mosquito was a simple act of heroism which we shall do well to honor. Although Dr. Carroll, after undergoing a severe attack of yellow fever, recovered from the disease, it left its traces behind in the form of an affection of the heart which undoubtedly ultimately resulted in his death, which occurred on Sept. 16, in Washington.

Dr. Carroll, at the time of his death major and surgeon in the United States army, was born in Woolwich, England, June 5, 1854. He enlisted in the United States army in 1874, serving as private, corporal and sergeant in two infantry regiments. From 1883 to 1898 he served as hospital steward, employing his time during the latter part of this service in the study of medicine. He was finally graduated in 1891 from the Medical Department of the University of Maryland, and thereafter prosecuted his studies further in the Johns Hopkins Hospital. He early showed a special interest in laboratory investigations, and, therefore, it was not a surprise that he was chosen in 1897, together with Dr. Walter Reed, Dr. James W. Lazear and Dr. A. Agramonte, to serve as a member of a commission to investigate yellow fever in the United States. Experiments made at that time quickly demonstrated the probability of the spread of the disease by mosquitoes, and a human subject seemed essential for the demonstration of the correctness of this supposition. Dr. Carroll was the first to offer himself for the purposes of this vitally important experiment, with the results which are now generally known and which have been emphasized by the circumstances of his death. In somewhat broken health Dr. Carroll maintained his interest in matters of bacteriology and pathology, and in 1899 received a commission in the medical department of the army. In 1907, although too enfeebled in health to take an active part in further investigation, he received the commission of major and surgeon, retaining his position as curator of the Army Medical Museum. Dr. Carroll held a wide society membership, and was an instructor in bacteriology and allied sciences in the Army Medical School as well as professor of bacteriology and pathology in the George Washington University.

Dr. Carroll was an earnest student and an enthusiastic investigator on the subject of infection, but his chief claim to perpetuity will undoubtedly lie in the spirit of self-sacrifice which led him to accept a very real danger in the hope that by his example and in a measure through his instrumentality a unique and far-reaching doctrine might be substantiated. Many others followed Dr. Carroll in offering themselves as subjects for experimentation, fortunately with no deaths, but this does not in the least detract from the honor due Dr. Carroll in being the first to receive the inoculation. It is a somewhat pathetic fact, and possibly a commentary on the hard and self-sacrificing work of our scientific investigators, that but one of this now famous commission appointed to investigate yellow fever is living. None of these men had reached the acme of his usefulness, but the accomplishment of each was quite sufficient to give him a high place among the real benefactors of the human race.

IMPROVED HEALTH OF SCHOOL AND COLLEGE STUDENTS.

In the many articles appearing nowadays on the diseases incident to school life and the generally injurious effect of grade and high school conditions, the brighter side seems to have been quite overlooked. This is, that the scholars who graduate from our high schools to-day are taller, heavier and stronger for the same age than they were a generation ago. This statement holds both for the boys and girls.

In 1899 Dr. Paul C. Phillips, now in charge of

the Department of Hygiene and Physical Education at Amherst College, prepared some statistics for a periodical which was attempting to answer the question, Shall we become a race of giants? These figures were amplified and published in the *Physical Education Review*, June, 1904, under the title, "Is the Physique of the American College Man and Woman Degenerating?" They showed beyond a peradventure that the boy who goes to college to-day is taller and heavier and the girl taller, heavier and of greater chest girth than the boy and girl of the same age from forty to fifty years ago.

Mr. J. H. Vines had in 1899 found the same facts to be true in England, the boys in Marlborough and Rugby schools, ranging from twelve to eighteen years of age, being both taller and heavier at the same age than their fathers had been a quarter of a century before.

Of the girls examined at Smith College in 1900–03, those at seventeen years showed a superiority of a half inch in height, three pounds in weight and two thirds of an inch in chest girth over those at the same age 1883–88. At eighteen years the superiority amounted to three-fifths inch in height, nearly three pounds in weight and a half inch in height. These were, in general, corroborated by figures from Wellesley, Oberlin, Chicago and Mt. Holyoke colleges.

The Amherst College figures are from thousands of students and very reliable. They show the average heights and weights of students seventeen to twenty years of age to be as follows in three different periods:

HEIGHT OF AMHERST COLLEGE STUDENTS.

Age.	1860–84.	1884–94.	1900–03.
17 years	66.8 in.	68.0 in.	68.2 in.
18 "	67.0 "	68.1 "	68.4 "
19 "	67.1 "	68.2 "	67.7 "
20 "	67.5 "	68.3 "	68.3 "

WEIGHT OF AMHERST COLLEGE STUDENTS.

17 years	128.7 lb.	130.8 lb.	129.9 lb.
18 "	131.1 "	133.6 "	134.5 "
19 "	133.1 "	136.4 "	135.6 "
20 "	135.0 "	138.0 "	138.2 "

The statistics for 1900–03 would probably show the superiority more clearly were they as numerous as those for the preceding periods. The measurements of freshmen for the years since 1903 show the class averages even higher in height, weight and strength than they were in the years 1900–03, although the average age is somewhat less.

It is not claimed from these statistics that we will be a race of giants in 1950; thousands of years have changed stature but little, as Prof. Carl Pearson has shown; neither is it assumed that because height and weight increase, morbidity decreases. Educators and militarists are of the opinion, however, that an increase in the height and weight of the race would be desirable as indicating more complete growth and development. These two factors in racial improvement physically are certainly increasing.

There is evidence to show also that health, in our colleges at least, is improving. The president of one of our New England colleges, a man of unquestioned good judgment, in his report to the trustees in 1854 stated, "The waning of the physical energies in the midway of the college course is almost the rule rather than the exception among us, and cases of complete breaking down are painfully numerous." Such statements sound strange in our ears to-day. The health of students is generally better at graduation than on entering college, and the same might probably be said of our high schools, except in so far as health is modified by the pubertal period. While, therefore, much still remains to be accomplished in the field of school hygiene, we may encourage ourselves by the thought that we are physically not worse than our fathers and mothers.

COCAINE AND THE NEGRO.

POLITICAL history has perhaps never presented a graver problem than that which centers in the American negro. Centuries ago some among this unhappy people were taken from their native soil, brought hither and compelled to slavery. Recognizing that it is the white race which has primarily been responsible, the most humane among our fellow-citizens in the South, and its profoundest statesmen, are giving earnest and anxious thought to this problem; yet there is not one of them who is able to give a satisfactory solution of it.

This much is, however, becoming recognized: that to-day this question is taking on a phase which has not heretofore characterized it. The "before-the-war" negro was a genial and harmless creature. His loyalty was proverbial; the Southerner at the front did not hesitate to intrust wife, family and home to his care, and this at a time when he could easily have indulged evil propensities had any such existed. His greatest fault was alcoholism. But a drunken negro, though he might be noisy and a little contentious, was easily managed; he was even then

neither vindictive nor savage in his tendencies. Although the malign influences of the carpet-bagger and of the reconstruction period should have tended much to alter the character of the negro, it has, nevertheless, up to recent years remained decent, amiable and law-abiding.

But now an entirely new phase of the situation is manifest to those who are willing to accept facts. Many negroes are now guilty of most insensate crimes, such as are inexplicable upon any natural basis. Nor are these crimes committed in unsophisticated rural districts, no matter how dense may be the negro population in them; they are done especially in cities, or near mining, lumber, railroad and like camps, where industrial operations on a large scale are in progress. Nor are these crimes, as is so often held, only or even mainly against the sanctity of womanhood. Infants and venerable woman are attacked; "the wanton murders and deadly assaults committed with steadily increasing frequency under circumstances of absolutely fiendish savagery; the abandoned recklessness of consequences and the astounding indifference to the sufferings of either themselves or their victims"[1] — it is such things as these which now require to be considered. And so frightful have they become, transcending, as we have noted, all previous experience of the negro race, that many cannot credit the accounts of them. Yet the facts are abundantly testified to by men experienced in observing the negro working in gangs, and in pursuits other than agricultural.

A possible explanation of these phenomena lies in cocainism, particularly when combined with alcoholism. We know that gentle, cultivated and ordinarily well-poised individuals of the more highly organized white race are stimulated by cocaine to acts of violence due to the hallucinations induced by its use. How, then, can we expect otherwise than that an illiterate negro, living in a semi-barbarous environment, and unaccustomed to social discipline, will, when excited by this drug, become even more uncontrolled? There is good reason to suppose that cocaine is furnished the negro in such industrial settlements as we have mentioned. "An official of one of the largest drug houses south of New York says that his firm ships enormous quantities of the drug to all parts of this section of the country. The orders come from contractors and operators of the most extensive kind, and these say that they could not keep their working forces together for so much as a week if the men were unable to procure cocaine in the immediate vicinity."[2]

The National Association of Negro Physicians, Dentists and Pharmacists met recently in Baltimore. Its membership is made up of about three hundred among the two thousand negroes who are practising in this country; and every member holds a degree from some reputable medical college — Harvard, Yale, Columbia, the University of Pennsylvania and the like. These man are making a fight (though one most unfairly put upon them) for the eradication of cocainism, with its attendant evils—alcoholism, syphilis, and tuberculosis—from among their unhappy fellows; and it is for the profession at large to hold up their hands.

[1] New York Sun, June 27, 1907.

[2] *Ibid.*

MEDICAL NOTES.

Health in the Canal Zone. — It is reported from Washington that very great improvement has taken place in the sanitary conditions in the Canal Zone, with a corresponding reduction of illness among the canal workmen. With ten thousand more men at work, there are fewer sick this year than there were last. From the statements made it appears that the authorities have in hand the problems of sanitation, which at first appeared a menace to the successful prosecution of the work.

Pneumonia in Chicago. — According to the *Bulletin of the Chicago Department of Health*, for the first eight months of the year, the records of the Bureau of Vital Statistics show an increase in the reported deaths from pneumonia of one third (33.6%) over the number reported during the corresponding period of 1906. The increase of August, 1907, over August, 1906, is 43.1%, while the increase of the week of Aug. 31, 1907, over the number of the corresponding week of last year is nearly double (96.3%), that is, 27 in the 1906 week, and 53 in the 1907 week.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 25, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 46, scarlatina 47, typhoid fever 40, measles 68, tuberculosis 69, smallpox 1.

The death-rate of the reported deaths for the week ending Sept. 25, 1907, was 18.91.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 21, 1907,

was 217, against 235 the corresponding week of last year, showing a decrease of 18 deaths and making the death-rate for the week 18.57. Of this number 115 were males and 102 were females; 210 were white and 7 colored; 128 were born in the United States, 84 in foreign countries and 5 unknown; 40 were of American parentage, 145 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 33 cases and 4 deaths; scarlatina, 36 cases and 0 deaths; typhoid fever, 45 cases and 1 death; measles, 9 cases and 0 deaths; tuberculosis, 62 cases and 21 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 14, whooping cough 1, heart disease 20, bronchitis 1 and marasmus 12. There were 20 deaths from violent causes. The number of children who died under one year was 60; the number under five years, 76. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 77.

There was 3 cases and 0 death reported from cerebrospinal meningitis during the week.

PRESIDENT OF THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION. — Dr. Herbert F. Pitcher, of Haverhill, Mass., has been elected president of the American Electro-Therapeutic Association, which has recently been holding its annual meeting in Boston.

NEW HAMPSHIRE MEMORIAL HOSPITAL. — The tenth annual meeting of the New Hampshire Memorial Hospital in Concord, N. H., was held Sept. 11. This hospital was built to the memory of Dr. Julia Wallace Russell, and is devoted to the care of women and children. During the ten years of its existence it has ministered to a large number of persons unable to pay for medical attendance. Changes have been made in the hospital to meet the increasing demands upon it.

DIPHTHERIA AT APPONAUG, R. I. — Many cases of diphtheria have recently appeared in the village of Apponaug, R. I. It is an interesting fact that most of the cases have developed in the neighborhood of a trench running through the center of the village which received much waste during the recent rains. It is furthermore interesting that most of the cases are adults.

WORK OF THE NURSES IN THE PUBLIC SCHOOLS. — The newly appointed nurses for public school inspection have already demonstrated their usefulness by reporting various affections which need dispensary or hospital care. The question has arisen whether it is wise to make these reports public in the newspapers, thereby possibly exciting unnecessary alarm.

NEW YORK.

PHYSICAL CONDITION OF PUBLIC SCHOOL CHILDREN. — As a result of the recent agitation concerning the physical condition of public school children, the Board of Education is contemplating the establishment of a separate department of school hygiene, the province of which will be to act in an advisory capacity on all matters relating to the health of the pupils and to recommend safeguards for the protection of their physical welfare. Notwithstanding the work that is now being done by the Health Department in connection with the public schools, the estimated cost of putting the proposed new department in operation is at least $30,000, but the school commissioners feel that the results obtained would amply justify such outlay and also that the expenditure would be generally approved by the taxpayers.

DUST AS A CARRIER OF DISEASE AMONG SCHOOL CHILDREN. — In his recent annual report, Lyman A. Best, president of the Brooklyn Teachers' Association, gives the result of an exhaustive investigation which he has made as to the agency of dust as a carrier of disease among school children, and furthermore shows that the use of the feather duster is largely responsible for the prevalence of the various contagious diseases. An examination was made of the records of the Health Department from 1898, when the Greater City of New York was formed, to July 1, 1907, as regards the ordinary contagious diseases of childhood, such as measles, scarlet fever and diphtheria. This revealed the fact that an abrupt rise in the number of cases of these affections occurs in the autumn, after school opens and the windows are closed, while just as abrupt a drop occurs in the spring, when the windows are opened again. The decrease continues to a minimum in September, the maximum occurring six months later, in March. "What is the cause?" continues the report. "Dirt! schoolroom dust! Any one who has watched a janitor moving in a cloud of dust as he passes through the halls and schoolrooms after school, and who will note the layer of dust that settles over the floors, furniture and side walls after he has finished sweeping, will not wonder any further how the germs get mixed and distributed." Mr. Best then compares conditions in New York with those in Worcester, Mass.,

where sanitary methods of cleaning schoolrooms have been adopted. During the period from Jan. 1, 1898, to July 1, 1907, there have been reported 2,834 cases of measles in Worcester. The number of cases in New York for the same period, population reduced to the Worcester standard, was 6,432, or more than twice as many. In the case of scarlet fever and diphtheria the proportion of cases in New York in excess of the cases in Worcester was about 25%. Among the remedies suggested are the following: All feather dusters should be destroyed and their further use prohibited. Before any sweeping is done, wet sawdust should be scattered over the floor. Dusting should be done with dampened cloths. Every schoolhouse to be erected in the future should be provided with a complete vacuum outfit, with proper connections in every room of the building. "If, through the adoption of proper methods in cleaning," the report goes on to say, "the death-rate should be decreased by 1% for measles, scarlet fever and diphtheria, and if but one half the cases of these diseases are among school children, there would be a saving of life in New York of 85 school children a year who now die from measles, 53 from scarlet fever and 71 from diphtheria; 209 school children in all, and a total for the city of 418. Had the mortality rate in New York City for the three diseases discussed in this report been the same as in Worcester for the nine and a half years under consideration, the saving of lives in New York from these three diseases for that time would have been: 482 from measles, 2,760 from scarlet fever and 7,884 from diphtheria and croup, a total of 11,126, giving an average of 1,171 a year, or more than three lives a day."

Clean Milk. — The New York City Health Department having formulated certain regulations to insure the production of clean milk at the dairy, and having announced that unless these are complied with within a specified time no producer thus failing to remedy the conditions of his premises will be permitted to send his milk to the city, some of the farmers in certain parts of the state have raised a protest against the exaction of the rules as being too stringent. As a matter of fact, however, what the Health Department demands, as has been well said, is simply what an intelligent, up-to-date dairyman, eager to conduct his business in the best manner and to make the most of it, would do of his own accord in order to increase the returns on his capital and labor. Indeed, it is what the up-to-date dairyman has already done without any compulsion and he has had his reward in the shape of healthy herds and higher prices for his products.

A Death from Fright. — A death from fright, incident to an unusually loud clap of thunder, is reported from Mount Vernon, Westchester County. The patient was an old lady, seventy-five years of age, and her death was instantaneous. The predisposing cause is not given.

Epidemic Poliomyelitis. — Epidemic poliomyelitis continues prevalent, and it is stated that more than four hundred cases have been brought to the Hospital for Ruptured and Crippled for treatment. Dr. A. B. Judson, the well-known orthopedist, is authority for the statement that, as the result of observations at the out-patient department of the New York Hospital, it is believed that the deformity and lameness which follow an attack of this disease may be largely prevented by keeping the patient, after the fever has subsided, in a recumbent posture (or at all events off his feet) for eighteen months. This is not an easy thing to do when the child should naturally be learning to walk, especially as it is the common belief that exercise is more important for such a case than anything else. The reason, he says, is found in the fact that there is a spontaneous diminution of the paralysis for several months, and to make the muscles of the lower extremities do the work of carrying the body prevents them from sharing in the recovery which goes on without interference in the arms and hands, which are exempt from effort and strain. It has been noticed that the permanent paralysis and deformity are common in the lower and almost entirely absent from the upper extremities. The customary treatment for paralyzed limbs may be continued while the patient is recumbent.

Current Literature.

Medical Record.
Aug. 31, 1907.

1. *Whitman, R. *A Consideration of the Causes and Characteristics of the Weak Foot.*
2. Wolfe, E. P. *A Preliminary Report of Research Work on the Effects of Tropical Climate on the White Race.*
3. Waugh, W. F. *Fecal Toxemia.*
4. Clark, L. P., and Atwood, C. E. *Longevity of Idiots.*
5. Rosenbeck, C. *The Early Recognition of Tabes Dorsalis.*

1. Whitman brings forward a theory of the causation of weak foot, which will account for the discomfort without deformity that is often found in this condition and a treatment that is applicable to the prevention of the condition

before advanced distortion has occurred. There are two contrasting postures of the foot,— that of activity and that of inactivity. In activity the foot is incurved at the inner border and the arch is accentuated. In inactivity the foot is everted and the weight is directed toward the inner side of the sole. The abnormal persistence of the attitude of inactivity during exercise produces deformity. Abduction is caused by inward rotation of the leg upon the foot, and the astragalus supporting the leg sinks downward and inward upon the os calcis. Acquired flat foot and weak foot are an abnormal persistence of the attitude of abduction. The primary factor is the abduction, the secondary is the lowering of the arch. The symptoms are due to overstrain and injury to which disordered function has exposed the foot. Predisposing causes are insufficient support, due to congenital or acquired weakness of structure, weakness of muscles, overweight or strain and improper attitudes. Improper attitudes include toeing out, the most important bad attitude. Improper shoes are often worn. Rachitis is a cause of weakness of structure. Symptoms include bad attitude, weakness, pain in feet, knees and even back, and deformity with muscular spasm. Preventive treatment includes proper shoes and proper attitudes for children. Shoes should turn in. The brace used is made on an accurate plaster model made with the foot resting upon the outer border, slightly plantarflexed and perpendicular to the table. The brace is of sheet steel extending from the bearing surface of the heel to the metatarsal bone. It is placed in the shoe, and the inner flange is pressed against the arch in positions of strain. It should hold the foot in place without discomfort. The inner side of the shoe is raised. Deformity may need to be corrected with or without anesthesia.

NEW YORK MEDICAL JOURNAL.
AUG. 31, 1907.

1. RICKETTS, B. M. *Villous Papillomata of the Rectum.*
2. BUCHANAN, M. *Glaucoma.*
3. *SOLIS-COHEN, M. *Bacteriological Examination of the Feces as a Means of Early Diagnosis in Tuberculosis.*
4. WEINSTEIN, H. *Treatment of Chronic Indigestion.*
5. VON TILING, J. H. M. A. *Some Recent Ideas on Local Inflammation and Its Treatment.*
6. BROWN, E. L. G. *Children's Calculations.*
7. BIERHOFF, F. *Police Methods for Sanitary Control of Prostitution.* (Continued.)

3. Solis-Cohen reports six cases, all obscure, in which the diagnosis was only possible by finding tubercle bacilli in the feces. The technique is essentially that employed in sputum examination. None of these cases presented the typical picture of intestinal tuberculosis. In the one case which came to autopsy, a case of miliary tuberculosis, there were no lesions of the intestinal mucosa. There were pulmonary signs in five, but in none were tubercle bacilli present in the sputum. The writer urges the value of the examination of feces for tubercle bacilli in obscure cases and in early pulmonary tuberculosis when the sputum is either absent or negative. The necessity of the disinfection of feces in all cases of tuberculosis is obvious.

[R. I. L.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
AUG. 31, 1907.

1. SOLLMANN, T. *A Review of Recent Work on the Mechanism of Urine Formation.*
2. *PARK, W. H. *The Importance of Ice in the Production of Typhoid Fever.*
3. KASSABIAN, M. K. *Rœntgen Ray Technique in Dermatology.*
4. BOGGS, R. H. *Treatment of Acne and Chronic Eczema.*
5. MCGOWAN, G. *The Therapeutics of Tuberculosis of the Skin.*
6. ENGMAN, M. F., AND MOOK, W. H. *Two Seborrheids of the Face: I. Acne Rubra Seborrheicum. II. Pityriasiform Seborrheid of the Face.*
7. PORTER, M. F. *The Technique of Operations for Carcinoma of the Breast.*
8. STERN, W. G., AND ROSENBERG, E. *Plastic Radiography. A Preliminary Communication.*
9. GOOD, R. H. *A Simple and Safe Operation on the Frontal by the Intranasal Route.*
10. *PRATT, J. H. *The Class Method of Treating Consumption in the Homes of the Poor.*
11. DALAND, J. *Observations on Plague in India.*
12. JOHNSON, W. S. *The Quality of Public Water Supplies.*
13. CLARK, H. W. *Filtration of Public Water Supplies.*
14. *GOLDTHWAITE, J. E. *The Pelvic Articulations.*
15. *WHITE, W. C. *Spirochetes in Hodgkin's Disease.*
16. DRAKE, F. I. *Vaginal Hemorrhage in the New-Born.*
17. HARDING, M. C. *Simple Method of Retaining Anesthetic Mask in Place.*

2. Park considers that the danger of typhoid infection from ice is at best very slight and is quite negligible after the ice has been kept for six months.

10. Pratt gives the history of the first tuberculosis class of Emmanuel Church, Boston, the plan and methods of which were thoroughly described by Drs. Hawes and Floyd. Excluding present members of the class, there have been 37 members; 13 of these were far advanced cases, but 3 of these patients recovered. Of the remaining 24, 15 were moderately advanced cases, and in 9 of these the disease had been arrested. The remaining 9 were incipient cases, and of these 7 were apparently cured, and in the other 2 the disease was arrested. The expenses up to May 1, 1907, were about $2,000. The chief factors in the success of the class are given as follows: (1) The patients have spent the nights as well as the days out of doors; (2) they have been kept at rest in the recumbent position, not only until their temperature is normal, but until the symptoms of active disease have disappeared; (3) the system of daily records devised by Dr. C. L. Minor; (4) the weekly meeting. Implicit obedience of rules and regulations is required. Pratt gives details of the methods employed and illustrates the tents and other appliances for rest with open-air treatment.

14. The pelvic articulations are true joints and undergo definite motions, irrespective of sex. In women, during menstruation and more particularly during pregnancy, there is relaxation of these articulations. As joints, the pelvic articulations are liable to the same disturbances as other joints. Inasmuch as their stability depends on the tone and character of the muscles and ligaments, these articulations, more especially the sacro-iliac joints, are liable to strains and partial luxations. Lesions of the sacro-iliac joints are often complicated by lesions of a similar character in the spine. The common symptoms are limitation of motion and pain, usually in the sacral region, and often referred to leg or thigh, due to strain or irritation of the nerve trunks. Swelling is uncommon. The most characteristic sign is the fact that when the patient lies on his back, the hip motions are free as long as the knee is flexed. If the knee be straightened and thigh flexion attempted, then there is limitation and often pain referred to the sacro-iliac joint. This is due to the fact that the hamstrings, being stretched, pull on the ischium and cause motion of the joint. The treatment, depending on the character of the lesion, is usually by various supports, exercises, etc.

15. White has found numerous spirochetes closely resembling the spirocheta pallida in the glands of two apparently undoubted cases of Hodgkin's disease.

[R. I. L.]

THE LANCET.
AUG. 31, 1907.

1. *An Address to Students.*
2. *The Students' Guide,* 1907-1908.
3. *Regulations of Medical Examining Bodies.*
4. *Reports of Hospitals and Medical Schools.*

SEPT. 7, 1907.

1. *BERRY, J. *Remarks on Peritonitis and Its Treatment.*
2. *CAMPBELL-HORSFALL, C. E. *Acute Yellow Atrophy of the Liver Following Operation for Intestinal Obstruction.*
3. BIDWELL, L. A. *Intussusception Caused by an Inverted Meckel's Diverticulum; Excision and End-to-End Anastomosis.*
4. *DUDGEON, L. S., AND ADAMS, J. E. *A Case of Pyemia Due to the Influenza Bacillus, with Multiple Arthritis and Meningitis.*

5. *CHARTERIS, F. J. *Record of Changes Observed in the Blood Count and in Opsonic Power of a Man Undergoing a Prolonged Fast.*
6. WRIGHT, W. *Some Considerations on Epidemic Cerebro-spinal Fever.*
7. DRAGE, L. *The Treatment of Cancer.*
8. VERNON, H. M. *The Solubility of Air in Fats and Its Relation to Caisson Disease.*
9. THOMSON, A. B. M. *A Case of Self-Induced (?)Abortion.*

1. Berry divides all cases of peritonitis into four classes for purposes of treatment: (1) A simple, beginning peritonitis with no perforation of any viscus in which he believes in free purgation and salines by rectum, subcutaneously or intravenously; (2) where there has been a recent perforation, in which case immediate operation is necessary to close the perforation; (3) a later stage, in which there is considerable peritonitis with tendency to localize more or less in one region. In many of these cases Berry thinks an immediate operation does a great deal of harm. Purgatives, food by mouth or large enemata should not be given, and operation should be withheld until the condition is as well localized as possible. (4) Cases in which there is a general diffuse peritonitis over all or a large part of the abdomen. For all but the very worst cases he advises the Ochsner method; for the worst cases he considers the method advocated by Murphy the best, *i. e.*, a small wound, closing the perforation, a large drainage tube to the pelvis and the patient propped up in bed at an angle of 35° or more.

2. Campbell-Horsfall reports in detail a case of acute yellow atrophy of the liver with a table of eleven other cases reported up to date.

4. The writers give this case in full, as they have been unable to find a record of a similar instance of infection due to the influenza bacillus. Their patient was a girl ten months old. The infection was first localized in the right elbow and then the right hip-joint. Meningitis then supervened and death followed. Film preparations and cultures from blood and pus showed a pure culture of the influenza bacillus.

5. Charteris summarizes his observations on a man who fasted for fourteen days, as follows: The pulse slowed gradually as the fast proceeded; arterial pressure sank to 25% of the normal; the hemoglobin remained steady at first, but later changed rapidly; the red corpuscles did not vary except that at the end a few nucleated reds were found. There was a slight leucocytosis. The opsonic power showed no alteration.

BRITISH MEDICAL JOURNAL.

AUG. 24, 1907.

1. *HELME, A. T. *The Unborn Child: Its Care and Its Rights.*
2. TWEEDY, E. H. *Puerperal Morbidity.*
3. JARDINE, R., AND OTHERS. *A Discussion on the Justification for Artificial Dilatation of the Cervix to Hasten Delivery at Full Term, and the Most Appropriate Method of Procuring this Dilatation.*
4. *SPENCER, H. S., AND OTHERS. *A Discussion on Measures to be Recommended to Secure the Earlier Recognition of Uterine Cancer.*
5. SWAYNE, W. C. *Chorion-Epithelioma.*
6. LOCKYER, C. *The Operative Treatment of Carcinoma of the Cervix.*
7. KERR, J. M. M. *A Case of Complete Rupture of the Uterus, with Escape of the Fetus into the Peritoneal Cavity. Panhysterectomy. Recovery.*
8. STRASSMANN, P. *The Indications for Operations on Uterine Fibroids and the Methods of Performing Them.*
9. EDGE, F. *A Note on the Technique of Abdominal Hysterectomy for Fibroids.*
10. CAMERON, S. J. *Fibroids and Fibro-myomatous Tumors in Unusual Sites.*
11. PARSONS, J. I. *Notes on a Series of One Hundred Consecutive Abdominal Sections in Hospital Practice.*

1. Helme considers the important subject of the care and rights of the unborn child in a thorough, careful and scientific way. The agencies of late years being brought to bear to prevent infant mortality are not used soon enough, but should be brought into play before the child is born. He considers briefly the subjects of fetal mortality and morbidity; the value of fetal life; diminution of birth-rate and its causes; and certain factors affecting the unborn child, such as food, its quality and quantity, especially the latter, stating that in his experience pregnant mothers eat far too much. Drugs, alcohol, mode of life and work are all considered.

4. Spencer, in order that uterine cancer may be earlier recognized, advises the diffusion of knowledge among women of twenty-five years and over as to its first signs and symptoms, and that all practitioners should make a careful examination, microscopic if possible, of all growths and tumors of that region. Frank speaking was urged in every case of trouble in the pelvis which might be malignant.

AUG. 31, 1907.

1. LOCKWOOD, C. B. *Clinical Pathology in its Relation to Diagnosis and Treatment.*
2. *RENNIE, G. E. *The Open-Air Treatment of Acute Pneumonia.*
3. *ACLAND, T. D. *The Need for the Inspection of All Residential Secondary Schools in Matters Relating to Sanitation and Hygiene.*
4. COX, A. *The Transformation of the British Medical Association. Naval and Military Section.*
5. PORTER, J. *Preventive Medicine in the Navy and Army.*
6. GASKELL, A. *Treatment of Wounded in Fleet Actions.*
7. DAVIES, A. M. *Enteric Fever: its Spread by Personal Infection, and Preventive Measures in Active Service.*
8. *BASSETT-SMITH, P. W. *The Frequency of Aneurysms in the Royal Navy.*
9. BUSHE, C. K. *The Treatment of Syphilis Afloat.*
10. NORRIS, H. L. *Wireless Telegraphy and Hospital Ships.*
11. CALDWELL, R. *On Enteric Fever during Active Service.*
12. GILES, P. B. *The Position of the Volunteer Stretcher-Bearer.*
13. GILES, P. B. *The Disposal of Excreta in Camp and upon the Line of March.*
14. FAICHNIE, N. *Water Supply in Camps, on the Line of March, and in Battle.*
15. WILSON, E. M. *The Necessity for Trained Male Personnel in the Medical Services on Mobilization for War.*
16. BLACKHAM, R. J. *The Teaching of Hygiene in the Army.*
17. SUTCLIFFE, D. T. *The Treatment of Burns and Scalds Afloat.*

2. In twenty cases of pneumonia Rennie has used outdoor treatment. There were but two deaths. He believes that this treatment has a distinctly beneficial effect on all the symptoms, especially on the pulse. Sleep is easier to obtain and cyanosis greatly decreased.

3. Acland thinks that far too little attention is paid to sanitation and hygiene by school authorities and inspectors. The doctor in attendance treats the sick child but neglects the causes underlying its illness. Bad food, too little sleep, too much study, are all large factors in preventing healthy development of growing boys. Various examples of deplorable conditions are given and remedies suggested. The remarks only apply to conditions in England.

8. Bassett-Smith believes that aneurysms are especially frequent in the navy. During seven years at the Haslar Hospital there have been 47 cases, of which 37 were thoracic, while 10 were abdominal. The majority were found in men who worked in the engine-room. He has been unable to find evidence that in this series either syphilis or alcohol played a very large part.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, NO. 29.

JULY 18, 1907.

1. *BIER, A. *The Influence on Malignant Tumors of the Injection of the Blood of a Different Species.*
2. FRANKE, F. *The Diagnosis and Treatment of Chronic Joint Diseases.* (Continued.)
3. CITRON, J. *Investigations of Complement Binding in Infectious and Post-infectious Diseases.*

4. *STRAUSS, H., AND LEVA, J. *A New Test of the Motility of the Stomach.*
5. MARCUS. *Two Cases of Gout.*
6. CARO, L. *Banti's Disease Cured by Removal of the Spleen.*
7. VÖRNER, H. *A Case of Oedema Cutis Factitium.*
8. *BÖCKER, W. *Paralytic Luxation of the Hip-Joint.* (Concluded.)

1. In a previous communication, summarized in these columns (*Deut. med. Wochenschr.*, No. 23), von Leyden showed the specific action of fresh liver ferment upon carcinoma. Bier, in the present article, reports a similar action, when the blood of a different species is injected in the neighborhood of the cancer. If 10 to 20 cm. of defibrinated swine's blood be injected subcutaneously under aseptic precautions, a very striking local reaction is set up, with fever and often chills. This subsides after three or four days and by repeating in greater or less amounts, the severity of the reaction can be more or less controlled. He asserts that a large carcinoma of the face, after four injections, became converted into a firm scar through the intense inflammatory infiltration and connective tissue growth. Another cancer of the neck under the influence of the enzyme broke down in rapid necrosis and subsequently healed. Other cases were apparently influenced. He also used these injections in 3 cases of benign hypertrophy of the prostate with retention of urine, with apparently beneficial results. That we shall ever be able to control the growth of malignant tumors by this or similar methods, Bier thinks is extremely doubtful, but the subject is full of interest and needs thorough investigation.

4. Since the use of fat in test meals for the determination of motility was first proposed by Matthieu in 1896, it has been open to many objections. Strauss thinks he has overcome these by employing, as the fat-containing agent, a cracker made up in pieces of 50 gm. each, having a fat content of 10.6% butter and 5.3% milk fat. This has an agreeable taste, keeps a long time and has a constant fat content. He gives it with 400 cc. of tea and one hour after ingestion removes the contents in three parts: (1) the expressed contents, (2) the washing after the introduction of 100 cc. of water, and (3) after washing with several liters. For the determination of fat the authors prefer the refractrometric method of Wollny instead of the more complex Gerber's butyrometric method, as it gives equally exact results, and the necessary refractrometer is an instrument which should be in every laboratory. Experience with this method has already shown that stomach disturbances are decidedly more complicated than has hitherto been imagined. By it, one can decide whether an increase in the amount of the expressed contents points to an hypersecretion or to a motor disturbance, and discriminate more exactly than before between hypersecretion and hypo-acidity, since the volume of secretion as well as the acidity of the pure gastric juice can be calculated.

8. Böcker concludes that the spinal paralyses of children often go on to a paralytic luxation of the hip-joint, and that as a cause the antagonistic muscle theory of Seeligmuller holds good to-day. The x-ray shows backward displacement more often than is commonly supposed, while luxation forwards, as shown by typical abduction, contractures and palpation of the head of the femur under the horizontal part of the pubic bone, is often a subluxation. True luxation proved by the x-ray is comparatively rare. Prophylactic treatment to prevent contractures is of the greatest importance. If contractures have occurred, tenotomy in early cases, operation and cutting of contracted muscles, forcible replacement and holding position with plaster bandages, give the best results.

JULY 25, 1907.

1. *BICKEL, A. *The Pathology and Treatment of Hyperchlorhydria.*
2. BASSENGE AND KRAUSE, M. *Protective Substances Obtained from Pathogenic Bacteria.*
3. *MUHLENS, P. *Contribution to the Experimental Infection of the Rabbit's Skin with Syphilis.*
4. *PLEHN, A. *The Unity of Malarial Parasites.*
5. FRANKE, F. *Diagnosis and Treatment of Chronic Joint Diseases.* (Continued.)
6. KETTNER. *Automobile Injuries.*
7. HELLER, J. *Skin Changes in Diabetes Broncé.*
8. AXMANN, H. *Treatment of Lupus by Means of the Uviol Lamp.*
9. CITRON, H. *A Saccharometer for Simultaneous Quantitations of Sugar in a Number of Specimens of Urine.*

1. The importance of a normal standard in the diagnosis of conditions depending upon anomalies in the secretion of the gastric juice is evident. The author was able to observe the character of the stomach secretion in a young girl, who suffered from a fistula following a benign stricture of the esophagus. His results are similar, in the main, to those of Pawlow, who used dogs with artificially induced esophageal fistulæ. He states that pure, normal gastric contents (a mixture of pure gastric juice, food saliva, and alkaline mucus) contains two or three times as much HCl as is usually supposed, being 0.4 to 0.55%. This acid content remains remarkably constant during a secretion period. As a classification is necessary for intelligent treatment the author divides cases of supersecretion, according as it is confined to the digestive period or is continuous. He finds with Pawlow that psychic, chemical, and mechanical stimuli are of the utmost importance in increasing the flow of the gastric juice, and in any treatment of hyperchlorhydria these should be strictly eliminated. Drugs are of little use. Alkalies and mineral waters may be used freely. The alkalies available for this purpose are the carbonates of sodium, calcium, and magnesium. The chief reason for selecting one or the other of these remedies is their effect upon the intestine, the magnesium salts being laxative, and the soda having no effect. They all tend to diminish the secretion of acid, while proteid food, especially meat, tends to increase it. Therefore they should be given on an empty stomach.

3. Muhlens has experimented by rubbing into the skin of rabbits the expressed juice from lungs, suprarenals, and liver of a one and one-half-hour old child, dying of congenital lues. With this fresh juice, in which the spirocheta pallida was proven present, he was able to produce a keratitis parenchymatosa of syphilitic origin.

4. Plehn describes a case in which, four weeks after the cure of a Blackwater fever, contracted in West Africa and showing typical malarial organisms, a benign tertian infection developed while the patient was in Germany. He claims this is an illustration of how one form of the malarial parasite may change into another through change of climate. [L. G. M.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 27.

JULY 8, 1907.

1. *AUFRECHT. *Modern Ideas on the Question of the Track of Infection in Apical Tuberculosis.*
2. ROTHSCHILD, D. *Some Changes in the Chest, Mechanically Affecting the Condition of the Apices in Phthisis.*
3. HART, C. *Refutation of the Theory Set Forth in No. 2.*
4. V. HANSEMAN. *Remarks on the Sclerosis of the Costal Cartilages in Relation to Phthisis.*
5. LISSAUER, M. *The Condition of the Fibrous Joint between Manubrium and Body of Sternum in Relation to Tuberculosis of the Lungs.*
6. BENCE, J. *Communication on Experimental Renal Dropsy.*
7. MAYER, A. *The Presence of Bile Acids in Human Milk.*
8. *MOHR, L. *Pathology and Treatment of Certain Forms of Emphysema of the Lungs.*

1. Aufrecht has shown that the earliest tuberculous changes at the apices do not arise from the infection in the small bronchi, but the primary tubercles are always in close relation with the small arteries and the capillaries. It is possible, as has been shown by serial sections, for tubercle bacilli to pass through the walls of these small vessels into the surrounding tissues. The portal of entry for the bacilli which is by far the most common is the tonsils; then the glands of the neck or the mediastinum becomes infected, and from these seats of infection, the blood vessels carry the bacilli to the apices of the lungs. The author thinks infection through the lymph channels is very rare. He considers the theory of infection by inhalation as untenable.

8. Mohr says that besides ordinary emphysema of the lungs due to increased difficulty in inspiration or expiration (chronic bronchitis, bronchial asthma, etc.) there is

a group of cases, due primarily to fixation of the ribs by stiffening or actual calcification of the costal cartilages. He has noted numerous cases, and also refers to Freund's series. In these cases there is but little movement possible during breathing, and the expiratory contraction does not exist. In a few cases resection of small portions of the calcified costal cartilages has been followed by a return of the movement during respiration. with a marked improvement in dyspnea, and disappearance of cough and bronchitis. [R. D.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT, No. 29.
JULY 16, 1907.

1. PFAUNDLER, M. *The Treatment of Congenital Lack of Resistance.* (Continued article.)
2. *MAGNUS, R. *The Constipating Action of Morphin.*
3. *JOLLASSE. *The Present Position of X-ray Examinations in the Diagnosis of Stomach and Intestinal Disease.*
4. KIENBÖCK, R., SELIG, A., AND BECK, R. *Comparative Observations on Swimmers.* (Continued article.)
5. *MANDELBAUM, M. *The Action of Taurocholate of Sodium and of Animal Bile on the Pneumococcus, Streptococcus, Mucosus and Other Streptococci.*
6. SCHWAB, M. *The Successful Use of the Pessary in Gynecologic Practice.*
7. SITTLER, P. *Therapeutic Researches in Rachitis.*
8. KÄMMERER, H. *A Case of Tabes and Pseudo-combined Sclerosis of the Cord.*
9. MAIER, F. *Remarks on the Treatment of Sepsis.*
10. GROSSKOPFF, W. *A Modification of Killian's Nasal Canula.*
11. BEITZKE, H., AND ROSENTHAL, O. *Communication on the Differential Diagnosis between Different Forms of Streptococci.*

2. Magnus demonstrated Nothnagel's theory that morphin exerted its action on the intestine through the sympathetic system to be mistaken. Having cut the sympathetic nerves carefully, after the recovery of the animals, large doses of morphin worked as well as in normal animals. In a series of experiments on cats and dogs who had been given large doses of bismuth mixed with food and then observed with the fluoroscope, Magnus found that after doses of morphin food remained in the stomach from three and one half to eight hours, and that owing to a constant contraction of the sphincter antri, came only very slowly into the pyloric portion of the stomach. The peristalsis was unchanged. On dogs, with duodenal fistulæ, it was found that the food passing from stomach into intestine, under the influence of morphin, was very much more finely divided than normal. These observations point to a lengthening of the period of gastric digestion under morphin, and also to an increase in the digestion of the food in the stomach. The time for the food to pass the small intestine was also much prolonged, but in no way could it be demonstrated that the large intestine was affected by the drug.

3. Very valuable data can be obtained by the x-ray examination of the stomach and intestines, after the administration of a "bismuth meal." The size, shape and position can be more accurately judged in this way than in any other. The question of motility is easily settled by timing the disappearance of the shadow from the stomach. Any shadow remaining after three hours may be considered as abnormal. The secretory functions of the stomach may also be judged in this way. A small dose of bismuth is put up in a capsule of goldbeater's skin,which is digested in a longer or shorter time by the gastric juice. The bismuth which at first appeared as a small round shadow is liberated and appears as an irregular cloud. The time taken for this reaction will give an idea as to the condition; *i. e.*, one and one-half hours when hyperacidity is present, two and one-half hours under normal conditions and five hours or more for anacidity. Chemical controls have shown the above method to be trustworthy. In ulcer of the stomach, the ulcerated area may be located by the bismuth which adheres to its surface. This is by no means a constant occurrence. In regard to intestinal diagnosis, this method tells little about the condition of the small intestine. Useful data as to the position of the large intestine (ptosis, etc.) may be obtained and, in favorable cases, stenosis may be localized. In conjunction with other methods of diagnosis the author recommends this procedure very highly as many valuable points may be gained thereby.

5. Mandelbaum treated twenty-four-hour bouillon cultures of pneumococcus, streptococcus, mucosus and other streptococci with 2 cc. of 10% solution of sodium taurocholate. After shaking the mixtures, he found that cultures of pneumococcus, streptococcus and mucosus were clear, bright and transparent, the other streptococci cultures were still cloudy. Cultures from all the above were sterile. In hanging drop preparations, not a trace of pneumococcus or streptococcus mucosus was to be seen, but when these preparations were stained with methylene blue and examined with the oil immersion fairly numerous involution and degenerative forms were to be seen. The same result as the above was obtained by using oxgall instead of sodium taurocholate. The latter is hard to obtain, must be freshly made, and is expensive.

[R. D.]

REVUE DE CHIRURGIE.
JULY, 1907.

1. POIRIER, P., AND PICQUÉ, R. *Surgical Anatomy of the Hyo-thyro-epiglottic Region.*
2. *JEANBRAU, É., AND ANGLADA, J. *Trauma and Appendicitis; a Pathological and Medico-Legal Study.*
3. *CORBELLINI. E. J. *The Radical Cure of Inguinal Hernia.*
4. *QUÉNU, E. *Separation of the Inferior Tibio-Fibular Joint.*
5. GUIBÉ, M. *Volvulus of the Small Intestine and of the First Part of the Large Intestine.*
6. BAUMGARTNER, A., AND HUGUIER, A. *Sub-astragaloid Dislocation of the Foot.* (Continued article.)

2. As a result of an interesting study which the authors have made concerning the rôle which trauma may play in causing appendicitis, the following facts are brought out: (1) In an individual whose appendix is healthy and contains no foreign body, a blow on the abdomen or a violent effort cannot call forth appendicitis. (2) In a person having had attacks of appendicitis, or in one suffering from latent appendicitis,such a blow, even though it be a considerable distance away from the ileo-cecal region, can light up the chronic inflammation and cause an acute attack, with perforation, and even death. (3) In one suffering from latent appendicitis an effort such as a fall on to the feet, by rupture of adhesions, can bring about the same result. (4) If pain and signs of peritonitis do not occur till after forty-eight hours from the time of the accident, this cannot be held responsible for the attack. (5) If the patient, having recovered from the attack caused by the trauma, has still further attacks, these cannot be imputed to the original trauma. The application of these facts in accordance with the law of 1898 regarding accidents to working men (Employers' Liability) is considered.

3. Corbellini considers it wrong to operate on all inguinal herniæ according to a single method. He divides herniæ of moderate size into (*a*) retro-inguinal and (*b*) intra-inguinal. In the first he advises repair of the posterior wall, leaving intact the anterior wall, and internal ring. In the second he repairs only the anterior wall, narrowing the canal and the external ring.

4. Quénu states that separation of the inferior tibio-fibular articulation is not peculiar to any one form of fracture. It can occur in conjunction with (*a*) fracture of the fibula in its upper quarter; (*b*) with Dupuytren's fracture (practically the same as Pott's fracture); (*c*) with a fracture of the extreme lower end of the fibula; (*d*) with a fracture of the internal malleolus; (*e*) with an oblique fracture of the lower quarter of the tibia; or, (*f*) perhaps, even when fracture is absent. It most often accompanies Dupuytren's fracture. The mechanism by which it is caused is an abduction of the toe with internal rotation of the sole of the foot. The prognosis of a fracture complicated by such separation should be a guarded one. In all fractures of the lower quarter of the tibia or fibula such separation should be looked for in the x-ray plates, and proper means taken for its immediate reduction, as the function of the ankle is considerably impaired if the condition is allowed to persist.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPT. 14, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1329	534	Quincy	7	2
Chicago	—	—	Waltham	9	3
Philadelphia	—	—	Pittsfield	4	—
St. Louis	—	—	Gloucester	9	2
Baltimore	193	77	Brookline	3	—
Cleveland	—	—	North Adams	6	2
Buffalo	—	—	Chicopee	7	6
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	5	2
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Leominster	6	1
Providence	59	26	Hyde Park	2	0
Boston	201	83	Melrose	3	0
Worcester	41	17	Newburyport	—	—
Fall River	46	31	Woburn	8	1
Cambridge	23	10	Marlboro	—	—
Lowell	41	11	Westfield	2	1
Lynn	30	13	Peabody	—	—
New Bedford	34	20	Revere	3	—
Springfield	23	4	Attleboro	5	4
Lawrence	31	17	Clinton	2	0
Somerville	13	1	Adams	7	5
Holyoke	15	9	Gardner	1	—
Brockton	15	5	Milford	—	—
Malden	9	4	Watertown	0	—
Chelsea	15	7	Plymouth	—	—
Salem	15	10	Weymouth	3	0
Newton	16	6	Framingham	5	4
Haverhill	8	2	Southbridge	—	—
Fitchburg	16	7	Wakefield	—	—
Everett	13	10	Webster	—	—
Taunton	17	6			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING SEPT. 21, 1907.

F. E. CAMPBELL, passed assistant surgeon. Detached from the "Washington," ordered home, resignation accepted to take effect Oct. 1, 1907.

A. B. CLIFFORD, assistant surgeon. Orders of June 17 revoked; detached from the "Maryland," and ordered to the Naval Hospital, Mare Island, Cal.

D. C. CATHER, assistant surgeon. Detached from the "Pennsylvania," and ordered to the Naval Training Station, San Francisco, Cal.

F. L. PLEADWELL, surgeon. Ordered to the Bureau of Medicine and Surgery, Navy Department.

K. OHNESORG, passed assistant surgeon. Detached from the "Wabash" and ordered to the Naval Hospital, Philadelphia, Pa.

J. L. BELKNAP, assistant surgeon. Detached from duty with the Marine detachment, Camp Harrington, Va., and ordered to the "Wabash."

E. A. VICKERY, assistant surgeon. Ordered to the Naval Hospital, Boston, Mass.

J. COWAN, pharmacist retired. Detached from the Naval Recruiting Station, New York, N. Y., and ordered home.

W. S. HOEN, passed assistant surgeon. Ordered to additional duty with Recruiting Party, No. 1.

H. E. AMES, medical inspector. Detached from duty on board the "Connecticut" as fleet surgeon of the Atlantic Fleet, and ordered to command the Naval Hospital, Boston, Mass.

N. T. MCLEAN, assistant surgeon. Detached from the Naval Hospital, Washington, D. C., and ordered to the Naval Station, New Orleans, La., Sept. 25.

C. T. GRAYSON, assistant surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Navy Yard, Washington, D. C.

The following assistant surgeons and acting assistant surgeons have been ordered to report for course of instruction at the Naval Medical School, Washington, D. C., Sept. 30, 1907: Assistant Surgeons, M. E. ROSE, W. H. SHORT, H. L. KELLY, M. A. STUART; Acting Assistant Surgeons, S. BACON, C. W. O. BUNKER, C. J. HOLEMAN.

RECENT DEATHS.

DR. FELIX NORDEMANN, one of the best known foreign practitioners in New York, died of cardiac disease on Sept. 15. He was born in Berne, Switzerland, in 1828, and received the degree of M.D. from the University of Berne in 1853. He was one of the founders, in 1860, of the German Medical Society of New York, which is now one of the largest and most flourishing societies in the city. Dr. Nordemann was an esteemed adviser in the early days of the municipal hospitals, and during his entire practice he devoted much attention to the welfare of the poor children of the East Side.

DR. GEORGE NEWBY, a retired physician of New York, died at Sanford Hall, a private sanatorium at Flushing, Borough of Queens, on Sept. 19. He was a native of England, and eighty-seven years of age, and was graduated from the Royal College of Surgeons, London, in 1846. He took much interest in civic affairs, and is especially remembered for good service during early cholera epidemics. For some years he was one of the directors of the Metropolitan Museum of Art.

DR. CHARLES BURR BRIDGHAM, M.M.S.S., died in Cohasset, Sept. 17, 1907, aged sixty-six. He was graduated from Bowdoin Medical College and later served in the Civil War. He was entrusted with the delivery to his wife of personal effects of Col. Robert G. Shaw who was killed while leading a charge of colored troops at Fort Wagner. Since the war Dr. Bridgham has been a well known physician in towns along the South Shore of Massachusetts Bay.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D. Fourth edition, enlarged and thoroughly revised. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

The Climatic Treatment of Children. By Frederick L. Wachenheim, M.D. New York: Rebman Co. 1907.

The Principles and Practice of Modern Surgery. By Roswell Park, A.M., M.D., LL.D. (Yale). Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Insanity and Allied Neuroses. A Practical and Clinical Manual. By George H. Savage, M.D., F.R.C.P., with the assistance of Edwin Goodall, M.D. (Lond.), B.S., F.R.C.P. New and enlarged edition. Illustrated. Chicago: W. T. Keener & Co. 1907.

Tracheo-Bronchoscopy, Esophagoscopy and Gastroscopy. By Chevalier Jackson, M.D. Illustrated. St. Louis: The Laryngoscope Co. 1907.

International Clinics. Edited by W. T. Longcope, M.D. Vol. III, Seventeenth series. Philadelphia and London: J. B. Lippincott Co. 1907.

Human Anatomy, including Structure and Development and Practical Considerations. By Thomas Dwight, M.D., LL.D., J. Playfair McMurrich, Ph.D., Carl A. Hamann, M.D., George A. Piersol, M.D., Sc.D., and J. William White, M.D., Ph.D., LL.D. Edited by George A. Piersol. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1907.

Does the Opacity of Incipient Cataract Ever Regain Transparency? By Laertus Connor, A.B., M.D. Reprint.

Register of Food. By P. W. Goldsbury, M.D. Boston: Whitcomb & Barrows. 1907.

The Status Medicus, a Statement and a Proposition. By James Krauss, M.D. Reprint.

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Original Articles.

THE TREATMENT OF TYPHOID FEVER WITH SPECIFIC SERA, FILTRATES AND RESIDUES (VAUGHAN).*

BY MARK W. RICHARDSON, M.D., BOSTON.

It is now eight years since the writer first took up the study of immunity in typhoid fever with the avowed purpose of developing, if possible, an effective, specific method of treatment for the disease.

Invaluable aid in the production of a specific serum was furnished by the State Board of Health, which put at my disposal its stable for the care and inoculation of horses. Finally, to Prof. Theobald Smith I desire to express my deep appreciation of his continued interest and encouragement.

From unavoidable circumstances the work has been carried on spasmodically, and is in many ways incomplete. It has been pursued along the broadest of lines. The finer problems of immunity have been left untouched. Briefly expressed,

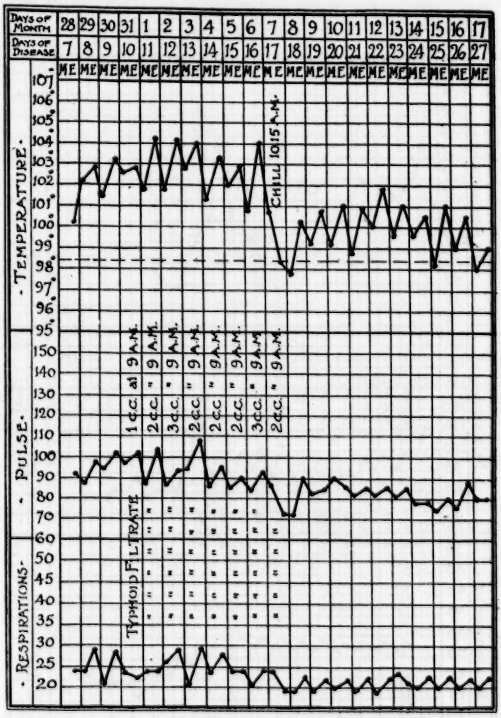


CHART 1.

Financially, the study has been supported by two grants of the Dalton Scholarship at the Massachusetts General Hospital.

For clinical material I am indebted for all but two cases to members of the Medical Staff at the same institution, and especially to Drs. Shattuck, Cutler and Minot. One case was referred to me by Dr. Arthur Broughton, of Jamaica Plain, and another by Dr. H. V. Reynolds, of Dorchester.

* Read at the Annual Meeting of The Massachusetts Medical Society, June 11, 1907.

the effort has been made, first, by inoculating the horse with typhoid material, to produce a serum which should be of assistance in human typhoid infection; and in the second place by inoculation of the typhoid patient himself with small doses of typhoid material to hasten his own immunity and cure. The latter method is, of course, similar to that of specific inoculation introduced recently by Sir A. E. Wright for staphylococcus and other bacterial infections. Thus far no attempt has been made to control treatment by observation of the so-called "opsonic index" of the blood.

This study covers observations upon 130 cases of typhoid fever, treated (in addition to the routine hospital treatment) with the following specific fluids: Antityphoid serum was used in 35 cases, and was produced by inoculating horses over a period of one to two years with gradually increasing doses of dead typhoid bouillon cultures. The serum of the horses was then given to typhoid patients (*a*) subcutaneously (5 cases in daily doses of 10 to 100 cc.); (*b*) by mouth or rectum or both (18 cases — dose, 100 to 1,000 cc. daily); (*c*) in pill form with special enteric coating (7 cases); (*d*) 5 cases subcutaneously with equal amounts of normal serum (15 cc. of each daily), to secure assistance of any complements which might be present in the normal serum. It was hoped that serum given thus in unusual method and dose might produce better results than had been previously obtained.

In a second series, 74 in number, a typhoid filtrate was used, always subcutaneously. This filtrate was obtained by passing living bouillon cultures through porcelain filters. The age of the cultures varied from two days to six weeks. The results obtained seemed to be the same, whatever the age of the culture. The dose averaged 3 cc. daily.

In a third series 21 cases were treated with "nontoxic residue" of the typhoid bacillus as prepared by Prof. Victor C. Vaughan, of Ann Arbor, and kindly sent to me by him (daily subcutaneous dose, 2 to 10 cc.). This residue, though nonpoisonous, contains all the essential immunizing portions of the typhoid organism.

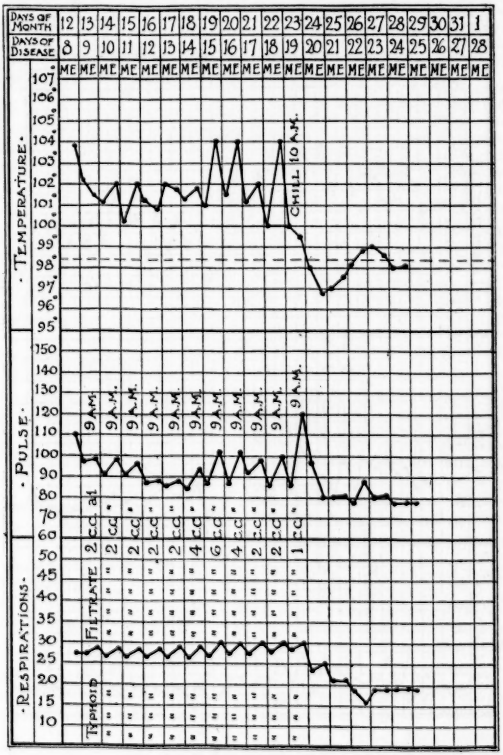


CHART 2.

Finally, in a series of 28 cases (6 of which are already included in series 3) it was attempted to prevent relapses in typhoid fever by the continued inoculation of the nontoxic residue at increasing intervals during convalescence.

Now, in any consideration of specific therapy in typhoid fever it is important to bear in mind that we have to do with a problem involving not the simple neutralization of a toxin by an antitoxin, as in diphtheria, but having for its object the in-

creased destruction of the invading germ. This destruction follows the interaction of factors much more complex than those seen in diphtheritic infection, and, furthermore, means the setting free of whatever intracellular toxin those germs contain. Treatment along these lines, therefore, would not be appropriate for patients already severely intoxicated, but should, on the contrary, be inaugurated at the earliest possible stage of the disease.

consequent shortening of his disease. That is to say, we have tried to hasten and strengthen the active immunity natural to the disease by the introduction into the body of additional small doses of specific infectious material.

That these inoculations, therefore, should be effective and advisable from a therapeutic standpoint it is essential, first, that the patient be not so sick that he cannot react with greater efforts towards destruction of invading germs and, sec-

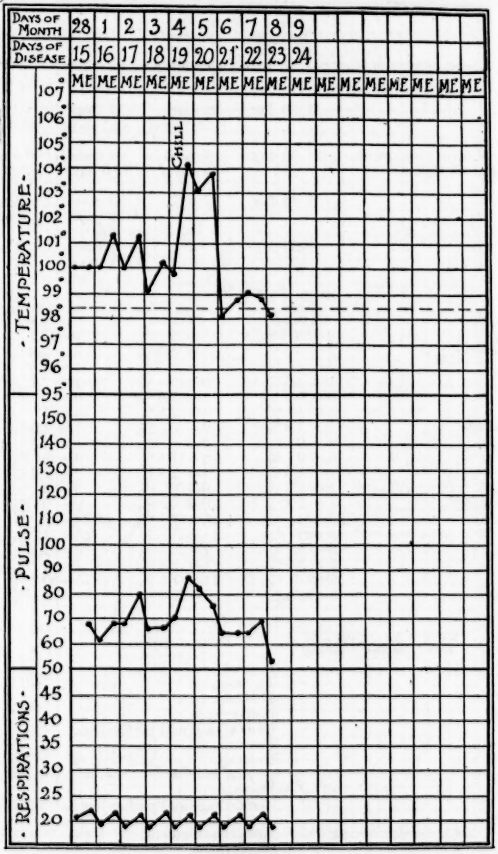


Chart 3.

With our serum, then, we have tried to introduce into the patient's body specific substances destructive to the typhoid bacillus, substances produced by inoculation in the blood and tissues of the horse. In other words, any immunity induced by this treatment is of the passive variety. With the filtrates and residues our object has been to stimulate the patient's own blood and tissues to greater production of specific antibodies, and the ond, that he can stand the temporary increased intoxication due to that destruction.

A comparative study of 130 cases of typhoid fever appears in the following tables, which offer many points of interest, but which must be scanned very critically lest they convey false impressions.

In the first place the percentage of children in any typhoid series is important because, as is well

TABLE I.

	Routine series.	Serum series.	Filtrate series.	Residue series.
No. of cases treated,	74	35	74	21
Cases 15 years of age or younger,	19	6	16	6
Average day of disease on entrance,	12.05	10.4	10.21	11.4
Average day of beginning treatment,	12.05	15.6	13.83	13.05
Treatment delayed, lack of diagnosis,	(20)	8	9	5
Average necessary delay,	(6)	4.25	8.88	5
Average length of fever in original disease,	67 cases	33 cases	63 cases	19 cases
	27.35	30.3	27.45	32.5
No. of days in hospital,	67 cases	33 cases	63 cases	19 cases
	31.77	45.75	41.57	42.42

TABLE II.

	Day of beginning treatment.	Routine treatment series.	Serum series.	Filtrate series.	Residue series.
Average length of fever subsequent to the beginning of treatment,	1–10 day	38 cases	9 cases	19 cases	8 cases
		16.55 days	15.8 days	11.15 days	19.37 days
	11–20 day	22 cases	17 cases	34 cases	8 cases
		17.26 days	16.1 days	13.64 days	20.75 days
	21–30 day	7 cases	4 cases	5 cases	2 cases
		12 days	10.5 days	18.6 days	9 days
	31–40 day	0	2 cases	1 case	0
		0	9 days	12 days	0
	41–50 day	0	2 cases	1 case	0
		0	7 days	17 days	0

TABLE III.

	Routine series, 74 cases.	Serum series, 35 cases.	Filtrate series, 74 cases.	Residue series, 21 cases.
Relapses, { true,	6= 8 %	8=22 %	9=12.1 %	3=14.2 %
Relapses, { intercurrent,	4= 5+%	3= 8.5 %	4= 5.4 %	1= 4.7 %
Otitis media,	4= 5 %	2= 5.7 %	1= 1.3 %	0= 0 %
Pneumonia,	1= 1.3 %	0= 0 %	2= 2.7 %	0= 0 %
Empyema,	0= 0 %	1= 2.8 %	0= 0 %	0= 0 %
Phlebitis,	3= 4 %	1= 2.8 %	3= 4 %	1= 4.7 %
Pulmonary embolism,	1= 1.3 %	0= 0 %	1= 1.3 %	0= 0 %
Periostitis,	0= 0 %	0= 0 %	1= 1.3 %	1= 4.7 %
Furunculosis,	0= 0 %	6=17+%	6= 8 %	3=14.2 %
Bed sores,	1= 1.3 %	1= 2.8 %	2= 2.7 %	0= 0 %
Abscess parotid,	1= 1.3 %	0= 0 %	0= 0 %	0= 0 %
Empyema gall bladder,	1= 1.3 %	0= 0 %	0= 0 %	0= 0 %
Diarrhea,	33=44 %	20=57 %	22=29 %	5=23 %
Tympanites,	15=20 %	11=31 %	18=24 %	2= 9 %
Hemorrhage,	6= 8.7 %	7=20 %	9=12.1 %	3=14 %
Perforation,	2= 2.7 %	1= 2.8 %	3= 4 %	0= 0 %
Delirium,	16=21 %	11=31 %	15=20 %	6=20 %
Severe renal disturbance,	9=12.1 %	8=22 %	7= 9 %	2= 9 %

TABLE IV.

	No. of cases.	No of deaths.	Per cent. of deaths.	Cause of deaths.	Remarks.
Routine treatment series,	74	7	9.4	Toxemia.	
				Toxemia.	
				Toxemia.	
				Hemorrhage.	
				Hemorrhage and perforation.	
				Toxemia.	
				Toxemia.	Embolism and pneumonia.
Serum series,	35	2	5.7	Toxemia.	
				Hemorrhage and perforation.	Operation.
Filtrate series,	74	11	14.8	Pulmonary embolism.	
				Hemorrhage.	
				Pneumonia.	Otitis media.
				Perforated appendix.	
				Toxemia.	
				Toxemia.	
				Toxemia.	
				Hemorrhage.	
				Perforation.	Operation.
				Hemorrhage.	
				Perforation.	Inflammation of both maxillary joints.
Residue series,	21	2	9.5	Hemorrhage.	
				Hemorrhage.	Mixed infection with staphylococcus aureus.

known, the disease in children is apt to be mild in type under natural conditions.

(2) Typhoid patients rarely come under any form of treatment until the disease has been in progress several days. Hospital experience, as shown by 204 cases, makes the average day of entrance the eleventh day. This early period, moreover, most important for the inauguration of any specific treatment, is still further lengthened by the fact that, even at this stage, a positive diagnosis is often impossible.

(3) In 204 cases specific treatment could not have been begun immediately in 42 instances, and the average increased delay from that cause would have been five days. Until, therefore, earlier diagnosis becomes available, specific treatment must be severely handicapped. Table II would seem to bear out this contention, for in spite of delayed diagnosis and treatment, there was in the early cases an apparent shortening of the original fever in the serum and filtrate series.

In the residue series, however, the subsequent fever was apparently lengthened, and statistics thus strengthen what was my strong impression while the cases were under observation, namely, that these cases were drawn out, but on the other hand seemed unusually mild in character. The coincidence of increased length with increased mildness may be only apparent, but further experience may give it great importance. As to the average stay in the hospital, the cases under specific treatment stayed considerably longer, — due undoubtedly to the large percentage in those cases of relapses. One serum case, for instance, went through five relapses and was in the hospital 116 days.

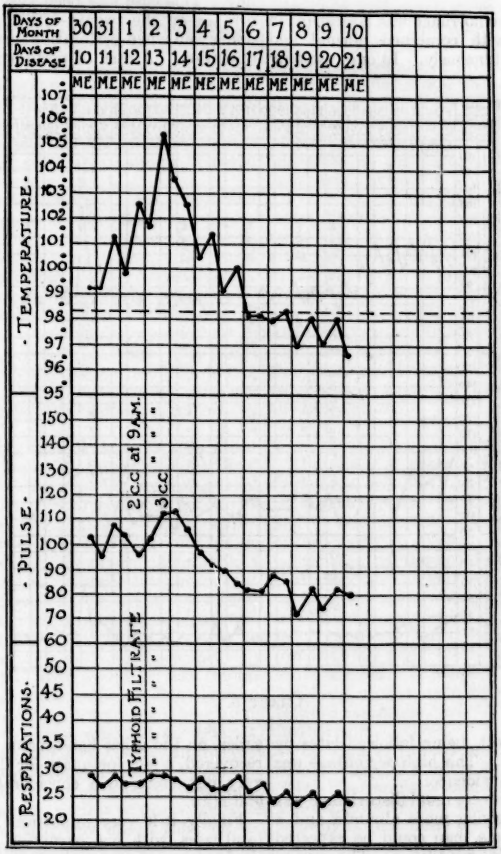


Chart 4.

The comparative frequency of complications appears in Table III.

Taken with the great reserve with which all such tables must be observed, we see that the impression of mildness in the residue series is further borne out.

The high percentage of diarrhea in the serum cases was due undoubtedly to the rectal administration of the remedy, and consequent irritability of the lower bowel.

The frequency of hemorrhage was largest (4) in the cases treated with combined normal and typhoid serum subcutaneously. In one case only and when the patient was apparently becoming rapidly convalescent. There was a similar case of embolism in the untreated series.

The case which died of pneumonia had practically finished a mild typhoid infection when double otitis media required etherization. Pneumonia and death supervened in four days.

A perforated appendix claimed a third case. Treatment was not begun till the thirty-second day. This case had been very severe with hemorrhage on the twenty-fifth day. The case was doing well when perforation demanded immediate operation. A case of perforation in the routine

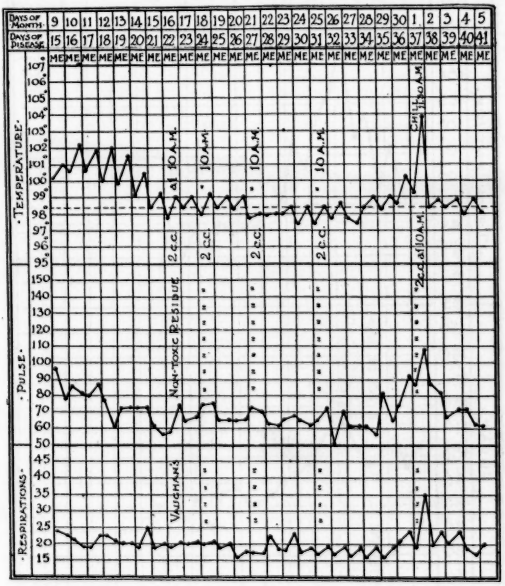


CHART 5.

was it of serious import, being followed later by perforation and death. This high percentage was probably simply a coincidence.

Under the head of severe renal disturbance was included all cases showing more albumin and a greater number of casts than could be expected from ordinary febrile conditions. The serum series shows apparently a very high percentage of kidney involvement, but close scrutiny shows that 4 of the 8 cases had this urinary condition before specific treatment was begun.

In studying the table of mortality (Table IV) one is struck immediately, of course, by the large mortality in the series of 74 filtrate cases as compared with 74 routine cases. This very unfavorable showing is very misleading, for in the first place the death from embolism occurred without warning nine days after inoculation had ceased, series, on the other hand, came to operation and recovered, a fact fortunate for the individual, but very disturbing in a consideration of mortality statistics.

Finally, it is very important to know that all fatal cases, with one exception (second perforation), were severely sick when they came under treatment, and the outlook in such cases, as we have seen, is not encouraging.

In the residue series the first fatal case, as proven during life and autopsy, was a mixed infection with the staphylococcus aureus. With our present knowledge this case would have received a mixed treatment of typhoid and staphylococcus vaccines, and might possibly have been saved.

Hemorrhage in typhoid, which claims so many victims, seems to be due, in part, at least, to a

faulty coagulability of the blood. It is not probable that antityphoid measures alone can materially affect mortality from this cause.

In this investigation certain phenomena have been observed which deserve mention.

In the serum series 1 case alone was marked by an unusual manifestation. A woman, moderately sick, had received subcutaneously for six days 100 cc. of antityphoid serum. On the seventh day, coincident with a very marked urticaria, the temperature fell suddenly, and her pulse became very weak. She was in a dangerous condition for twenty-four hours. The circulation then rapidly improved, in fact the clinical condition was better than before the occurrence. I ascribe it either to a sudden destruction of many typhoid bacilli with resulting hyperintoxication, or to some internal manifestation allied to the urticaria, and due to the same cause, namely, large amount of horse serum.

In the filtrate series, 29 cases were remarkable through the occurrence of quite characteristic reactions, namely, a chill coming almost always one hour after inoculation, and accompanied by a sharp rise in temperature, pulse and respiration. This increase in symptoms was followed in many instances by a marked decrease in the temperature and the pulse, and considerable improvement in the general condition of the patient. (See Chart 1.) After a short interval the temperature in most cases went up again, but in a few instances the temperature remained at normal permanently. (See Chart 2.)

This phenomenon, though rarely, is seen in the natural course of typhoid. (See Chart 3.) Tentatively I would explain it by supposing that ordinarily the destruction of typhoid bacilli with resulting toxin production takes place quite continuously, and sudden fluctuations in the intoxication are rare. Occasionally, however, under natural conditions, and especially under filtrate inoculation, destructive agencies are brought into sudden and excessive action with the resulting temporary increase in symptoms. This excess of action, as I take it, might well be followed temporarily by no action at all, and that would explain the fall in temperature and pulse. After a short interval the destructive apparatus would again take up its work, and the intoxication would go on (Chart 1) unless all the germs had been killed. In this case the temperature would remain normal, there being no further bacilli to furnish intracellular toxin. (Chart 2.) It may be possible to prove the truth or falsity of this theory by observation on the opsonic index before and after chill.

Another filtrate case was interesting because it shows very probably what might be accomplished in a majority of typhoid cases if they could but receive specific treatment very early in the disease. (See Chart 4.) This patient came in very mildly sick on the tenth day of the disease. Two inoculations with filtrates produced temporarily a marked increase in his symptoms, but this was followed immediately by a rapid and permanent convalescence. That these filtrates, furthermore, are anything but indifferent fluids I demonstrated on myself by a subcutaneous inoculation of 2 cc. For twenty-four hours I had fever, headache, backache, increased pulse-rate; in fact, all the common symptoms of an acute infection. Moreover, in three weeks my blood developed a faint but perfectly distinct typhoid reaction.

Finally, I have to record a series of 28 cases in which it was attempted to prevent relapses in typhoid. To accomplish this the patients were inoculated at increasing intervals during the convalescence with small doses (generally 2 cc.) of Vaughan's nontoxic residue.

In 28 cases there was one relapse. The incidence of relapse among the untreated cases during the same epidemic was 25 in 113 cases. That is to say, the percentage of relapses was reduced apparently from 22.1% to 3.57%. My strong impression that this gratifying result is real is reinforced by the behavior of some of the cases under inoculation.

For instance, in Chart 5, it is seen that four inoculations had been given during the convalescence without clinical manifestations. Five days after the last inoculation, however, the temperature began to go up in a very suspicious manner. An inoculation exactly similar to the previous ones now produced a very sharp reaction with a chill. The next morning, however, the temperature returned to normal and remained there. I believe this case would have relapsed if the beginning re-infection had not been nipped in the bud by the inoculation.

SUMMARY.

The study of specific therapy in 130 cases of typhoid fever has brought out the following facts:

(1) That specific therapy, confined to the original disease, increases, apparently, the tendency of the disease to relapse.

(2) That by therapeutic inoculation, however (Vaughan's nontoxic residue), continued into convalescence, the relapse in typhoid fever can be largely eliminated. This claim is made with much assurance, but is, of course, subject to confirmation by observation upon a much larger series of cases. If relapses can be prevented then it follows almost certainly that mild typhoid infections can be aborted. This study would show, furthermore,

(3) That to get the best results cases must be seen as early as possible in the infection, but

(4) That an early diagnosis in typhoid is oftentimes impossible, and that, for this reason, specific therapy suffers under a severe handicap.

(5) That antityphoid serum was no more effective than filtrates and residues and was infinitely more expensive.

(6) That typhoid filtrates may exert a powerful effect upon the clinical course of the typhoid process, their use being followed in many instances by chills, or rise in temperature and pulse, these being followed in their turn, oftentimes, by marked fall in temperature, pulse and respiration, and a general improvement in the clinical picture. The nature of these reactions is still unknown. It is hoped that further study, especially that of the

opsonic index, in connection with these reactions, may give valuable information concerning their nature.

(7) That the nontoxic residue of the typhoid bacillus as prepared by Professor Vaughan seems to make the typhoid process longer, but milder. As stated above, it is apparently very effective in the prevention of relapses.

MODERN OPERATIONS FOR COMPLETE REMOVAL OF THE PROSTATE.

BY ARTHUR TRACY CABOT, A.M., M.D., BOSTON,
Consulting Surgeon at the Massachusetts General Hospital.

AT the present time two methods of complete prostatectomy are being urged by earnest advocates: one is the suprapubic method and the other the perineal; both of these methods usually permit of thorough removal of the prostate. The choice between them should be based on the relative mortality of the operation, the quickness of recovery, and upon the degree of restoration of function obtained by each.

In order to decide these points and make a wise selection between these operations, it is, therefore, important to assemble statistics which shall give us reliable data, both as to mortality and as to after condition. Something is also to be said in regard to the technical difficulties which surround each operation.

I operated first by the suprapubic route, because it was an easy method of approach to the gland, requiring but little dissection. Since, however, I began to use the perineal operation I have gradually used it more and more, and I now find that I regard it as the method of choice, and I apply it to every case in which the removal of the prostate is the prime object of the operation. This change of practice has come about because I have found that although it takes a somewhat longer dissection to reach the prostate by the perineal route, the opportunity for accurate inspection and exact operative procedure is so much better as to wholly outweigh the added difficulties of the dissection. Some operators consider it of no consequence whether the prostatic urethra is torn much or little during the operation. The fact that good results are obtained when all of the urethra within the prostate is torn out with the gland leads many to think that it matters little what happens to the prostatic urethra, anyway. I cannot share this view, for I believe that when the prostatic urethra is for the most part preserved in its proper relations, not only is the healing and restoration of the parts more speedy but the chance of satisfactory restoration of function is more sure. Young has cited facts to show the retention of sexual power when the utricle and seminal ducts are spared. I believe that the restoration of satisfactory urination is more sure when the prostatic urethra has not been seriously torn.

One cause for lack of success in complete prostatectomy has been from the formation of flaps of mucous membrane which have afterwards acted as valves to hinder urination. These flaps form in two places: at the vesical outlet and at the apex of the prostate where it joins the membranous urethra. If the prostate is enucleated from above, the mucous membrane is broken through with the finger at the vesical outlet and through this opening the gland is stripped out. Working from above downwards, it must not infrequently happen that a portion of the urethra towards the apex of the prostate is left, while the portion of the urethra towards the bladder is thoroughly removed. This part of the urethra which is left projects back into the cavity from which the prostate has been shelled out. It forms, as it were, a cuff. It may be readily seen that with the current of urine flowing down from above, this cuff of mucous membrane, by folding from side to side, may readily close the opening of the urethra from an obstructing valve. Operating through the perineum with a wide incision, which allows the parts to be brought into view, the various steps of the operation are under the guidance of the eye, and the difficulties above described are easily avoided. The enucleating finger, entering at the apex of the prostate, separates the gland from its outer capsule, then from the vesical side, and lastly strips it off from the urethra. This separation of the gland from the urethra is done from within outwards, can be assisted by the scissors and blunt dissector and preserves the urethral wall for the most part.

Up to this stage of the operation the only damage done to the urethra has been the opening through which the tractor was introduced, and usually some tearing of its floor. The roof of the urethra is left intact. There is no cuff of mucous membrane which can roll in and form a valve. In a difficult case when the urethral wall is torn more than is usual the rent is so disposed that any flap that is formed is attached about the orifice of the bladder so that the urine as it flows out does not double it up in front of the stream but rather washes it out flat and escapes by it. If now there is a third lobe which has a broad base, it can be readily removed through the cavity left by the removal of the lateral lobes. If a very prominent third lobe is peeled out without removing the mucous membrane covering it a large loose flap is left which may act as a valve and obstruct the vesical orifice just as the third lobe itself did. When there is a pedunculated third lobe I prefer, therefore, to pull it out from the urethra and to cut it off with the thermocautery, removing its mucous membrane with it. In some cases there are several projections into the bladder, all of which can be dealt with in the same manner. By cutting off these pedunculated outgrowths *in toto* we avoid the formation of flaps of mucous membrane, which may afterwards act as valves. The vesical opening left after the removal of the lateral lobes is ample for the handling of a good-sized third lobe. I have found the lithotomy scoop a useful instrument in pulling down these projecting growths and have never been seriously hampered by want of room to properly deal with them.

Three times in the past three years I have encountered small obstructing prostates which could not be enucleated. One of these I approached from above, and finding a bar at the neck of the bladder I cut and cauterized it as deeply as seemed safe with so small a prostate. This operation was followed by but little improvement. The other two cases I treated by perineal prostatectomy. Finding that the glands would not peel out I cut them out piecemeal with rongeur forceps

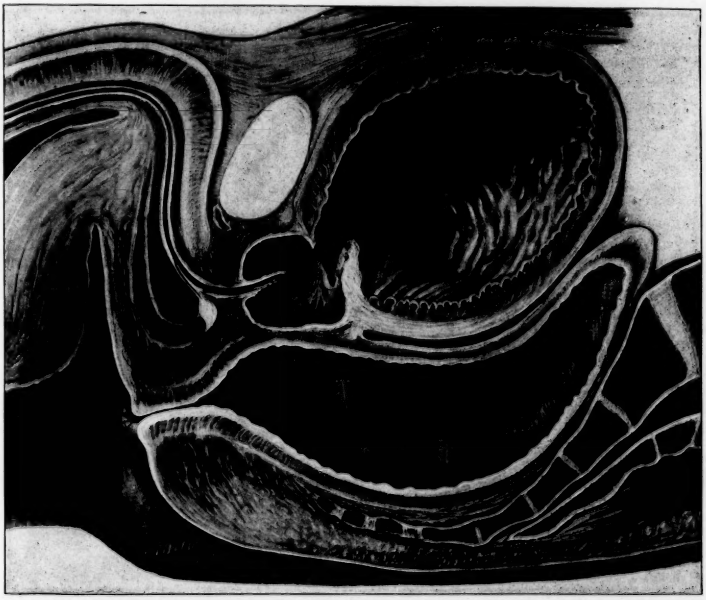
The histories of these two fatal cases are as follows:

Case 14. E. F. S., aged seventy-seven, entered the hospital March 26, 1905, with a history that he had been for ten years troubled with frequent urination.

Four weeks before entrance he began to feel as if he did not empty the bladder.

Three weeks ago the urine stopped. He then resorted to the catheter, which has been used ever since.

Two days ago he began to have difficulty in using



Diagrammatic drawing, showing above, a flap of mucous membrane left by shelling out a prominent third lobe, and below, a remnant of the urethral mucous membrane extending back into the cavity from which the prostate has been removed — either of which would tend to form a valvular closure of the urethra.

of the comfort of keeping the dressings dry. The in-lying catheter does not interfere with getting the patients out of bed, and it is our practice to get them up as soon as possible, for they seem to do better when moving about.

Mortality. — In the past four years I have operated on thirty-five cases by perineal prostatectomy. Two cases have died; one three days after operation, the other at the end of a month.

After this the quantity of urine fell till, on April 24, it was 50 oz. in twenty-four hours, with a specific gravity of 1,018.

He now became flighty in his mind, pulled out his tube, and had a catheter introduced through the urethra. He was gotten out of bed, thinking that this might improve his condition, but, although the quantity of urine became fairly good, he gradually became more and more feeble and died on May 18, one month after operation.

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My personal experience then has been that the restoration of function is more complete and lasting after the perineal than after the suprapubic operation. The control of hemorrhage I have found distinctly easier by the perineal route. A strip of gauze can be snugly packed into the prostatic capsule and then the end can be brought down through the outer wound which it should not fill tightly, for too much pressure against the rectal wall may produce sloughing and lead to a fistula. In the suprapubic operation it is difficult to apply packing so that it will stay in place and continue to exert pressure against the bleeding surface without so filling the base of the bladder as to exert injurious pressure on the ureters and to cause great discomfort to the patient. In one case of suprapubic prostatectomy I had great difficulty in controlling the hemorrhage, and lost my patient owing, as I thought, to the interference with the kidneys caused by the tight packing. Convalescence after perineal prostatectomy is much quicker and more comfortable than after the suprapubic operation. The tubes can be removed on the third to the fifth day, and after this the patient soon passes his own water with little or no involuntary leakage. At first the larger part of the water comes through the perineal wound and serves the good purpose of keeping this thoroughly washed out. Occasionally, for a few days, the urine comes away involuntarily through the perineal wound. This soon ceases, however, and usually, by the end of a fortnight, the greater part of the urine is passed *per urethram* with little or no escape through the perineum. It has happened in one or two of my cases that after taking out the tubes the patient has been unable to void the urine. In these cases the catheter is easily introduced through the urethra and drainage kept up for a few days in this manner, at the end of which time the power of voluntary urination has been invariably restored. In some few cases the patients preferred to have the catheter retained till the tenth or twelfth day on account of the comfort of keeping the dressings dry. The in-lying catheter does not interfere with getting the patients out of bed, and it is our practice to get them up as soon as possible, for they seem to do better when moving about.

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Four weeks before entrance he began to feel as if he did not empty the bladder.

Three weeks ago the urine stopped. He then resorted to the catheter, which has been used ever since.

Two days ago he began to have difficulty in using the catheter and he has now gone fourteen hours without having any urine drawn.

The greatly distended bladder was emptied and constant drainage was instituted.

At the time of entrance the urine was 1,027 specific gravity and showed a trace of sugar. Quantity of urine was only 19 oz. in the first twenty-four hours; the next twenty-four hours it rose to 35 oz.; and six days after entrance it rose in twenty-four hours to 85 oz., falling back, however, to 55 and 42 on the following days.

The patient was troubled with bronchitis of a chronic nature. Operation was put off in the hopes of somewhat improving this condition. However, his condition was so uncomfortable and manifestly getting worse that operation was undertaken on April 11.

In cutting into the prostate, considerable pus escaped and was pressed out during the subsequent enucleation.

The patient made a good recovery from ether, but on the following day the temperature rose to 101° and at night reached 103°. The quantity of urine in that twenty-four hours was 20 oz. and the specific gravity 1,018.

On the 13th of April, the temperature remaining up, the patient showed cyanosis, and râles were found at the base. The quantity of urine in this twenty-four hours rose to 40 oz. and contained 1.3% sugar.

On the 14th the patient became unconscious. The quantity of urine rose to 90 oz., with 3% sugar, and having a specific gravity of 1,028.

The patient died in the afternoon, and unfortunately an autopsy could not be obtained.

Case 15. P. P., aged sixty-one, entered the hospital April 10, 1905.

At time of entrance the patient was stupid and urine was tinged with blood. Patient said that he had always urinated well till five weeks ago, when he was seized with acute retention and catheterized. Since that time he has dribbled his urine in small quantities, with an occasional catheterization.

At the time of entrance the bladder extended above the umbilicus and the catheter introduced drew 40 oz. without emptying the bladder. Three hours later 20 oz. were drawn and in the evening of that day he was placed on constant drainage.

Two days after entrance the quantity of urine was 100 oz. in the twenty-four hours, specific gravity being 1,010.

On April 20 perineal prostatectomy was done, following which he passed 100 oz. of urine, with a specific gravity of 1,017.

After this the quantity of urine fell till, on April 24, it was 50 oz. in twenty-four hours, with a specific gravity of 1,018.

He now became flighty in his mind, pulled out his tube, and had a catheter introduced through the urethra. He was gotten out of bed, thinking that this might improve his condition, but, although the quantity of urine became fairly good, he gradually became more and more feeble and died on May 18, one month after operation.

No.	Age.	Name.	Residence.	Duration.	Amt. of Obstruction.
1	64	E.	Medford, Mass. Hospital case.	3 years.	Catheterized himself every 4 hours.
2	73	C.	Everett, Mass. Hospital case.	3 weeks.	Depends entirely on catheter since first attack.
3	56	S.	Amesbury, Mass. Hospital case.	7 years.	Depends on catheter entirely. Litholapaxy 3 days before operation.
4	54	N.	Dover, Mass. Hospital case.	7 years.	For 2 years urine dribbled. Bladder distended to umbilicus.
5	65	M.	Boston, Mass. Private case.	1 year.	Residual, 8 oz. in 1903. Later depended wholly on catheter.
6	68	C.	Haverhill, Mass. Hospital case.	2 years.	2 years ago frequency every 3 hours, now every 10 or 15 minutes.
7	71	H.	Milford, N. H. Private case.	3 years.	Frequency 21 times in 24 hours. Bladder distended above umbilicus.
8	72	L.	Cambridge, Mass. Hospital case.	Few weeks.	April 23 abdomen distended to umbilicus; 83 oz. drawn by catheter. Constant drainage.
9	53	V.	Cambridge, Mass. Hospital case.	11 years.	For 6 months used catheter once a day. Residual, 15½ oz.
10	71	R.	Haverhill, Mass. Hospital case.	12 years.	Urinates every hour or less in day, 1 to 3 hours at night.
11	57	F.	Haverhill, Mass. Hospital case.	2 months.	11 days ago stoppage. Since, catheter twice a day.
12	65	G.	Hospital case.	8 years.	Glycosuric. Past month dependent on catheter. Ten days ago could not introduce catheter. Constant drainage.
13	60	G.	East Dedham, Mass. Hospital case.	10 years.	Occasion use of catheter for retention. Entirely last two months.
14	77	S.	Hyannisport, Mass. Hospital case.	10 years.	Dependent on catheter for past 3 weeks.
15	61	P.	Roxbury, Mass. Hospital case.	5 weeks.	5 weeks ago acute retention. Catheter several times since. Abdomen much distended.
16	64	C.	Cambridgeport, Mass. Hospital case.	5–6 years.	Uses catheter 3 times daily.
17	78	H.	Haverhill, Mass. Hospital case.	10 years.	Suprapubic operation in 1897. Has used catheter for two years.
18	64	C.	Boston, Mass. Private case.	16 years.	Occasional use of catheter. Residual, 1⅛ oz.
19	62	P.	Hudson, N. H. Private case.	15 years.	For year used catheter 1–3 times at night, once in day.
20	69	M.	Rockland, Mass. Private case.	10 years.	Residual, 3 oz.
21	61	C.	Harwich, Mass. Hospital case.	7–8 years.	Acute retention 2 days ago. Bladder distended from umbilicus to pubes.
22		S.	Boston, Mass. Private case.	Many years.	Stream always sluggish. Recently almost stopped: after recovery, residual, 8 oz.
23	66	A.	Dorchester, Mass. Private case.	6 years.	Residual, 3½ oz. Urinates once an hour in day, only twice at night
24	60	S.	Cambridge, Mass. Hospital case.	1 year.	April 13 stoppage; 50 oz. by catheter. Catheter most of time since. Residual, 8 oz.
25		F.	Peabody, Mass. Private case.	2 years.	Increasing frequency and difficulty in urination. Worse past 6 weeks, requiring catheter.
26	64	W.	Waltham, Mass. Private case.	3 years.	Residual, 3 oz. Frequency, every hour or two during day.

DATE OF OP.	RESULT.	PATHOLOGY.	CONDITION AFTER RECOVERY.
Feb., 1904.	Recovered.	Glandular hypertrophy.	Six months later urinates every 3–4 hours. "Feels a new man." No residual. March, 1905, same report.
Feb., 1904.	Recovered.	Glandular hypertrophy.	March, 1905, all urine per urethra. Residual, 2 dr.
Feb., 1904.	Recovered.	Hypertrophy of glands.	March, 1905, no residual. Better than for 20 years. Perfect control.
March, 1904.	Recovered.	Glandular hypertrophy.	One month later no residual.
March, 1904.	Recovered.	Diffuse hypertrophy. Small prostate.	In 1907, good health. Passes all urine naturally. Residual in 1906, 2 dr.
April, 1904.	Recovered.	Glandular hypertrophy.	May, 1905, very well since operation.
May, 1904.	Recovered.	Glandular hypertrophy with cystic dilatation.	Four months later residual 2–2½ oz.
May, 1904.	Recovered.	Glandular and cystic hyperplasia.	Urination restored. At first residual. 17 oz.; one month later fell to 5 oz. At that time used catheter once a day.
May, 1904.	Recovered.	Simple hypertrophy.	One month later passing urine with very little pain. Residual, 4–6 oz.
May, 1904.	Recovered.	Glandular hypertrophy.	Last of July better than for years. No residual. June, 1905, much improved. Perfect control.
June, 1904.	Recovered.	Glandular hypertrophy.	Seen in September. Very well. Urination normal. June, 1905, symptoms all relieved.
Feb., 1905.	Recovered.	Chronic glandular hypertrophy.	April, 1906, well since operation. Urinates every 4 hours, once at night. Residual, 2½ oz. Sugar intermittent, now quite 1%.
Feb., 1905.	Recovered.	Glandular hypertrophy.	Calculi removed. March, 1906. No difficulty. "Never felt better." M. G. H.
April, 1905.	Died.	Glandular hypertrophy.	Sugar found in small amount. Passes 90 oz. urine. No autopsy. M. G. H.
April, 1905.	Died.	Glandular hypertrophy.	Died one month later of pneumonia. M. G. H.
June, 1905.	Recovered.	Adenoma.	Jan., 1907, died of heart failure. "Had no trouble with urination since operation." M. G. H.
Oct., 1905.	Recovered.	Cystic adenoma.	M. G. H.
Nov., 1905.	Recovered.	Glandular hypertrophy with retention cysts.	Jan., 1906, felt well. Urinates every 1½–2½ hours. Residual, ½ oz.
Dec., 1905.	Recovered.	Adenoma.	July 30, 1905, ½ oz. "Feels 100% better since operation."
Jan., 1906.	Recovered.	Adeno-fibroma with cystic formation.	No residual.
April, 1906.	Recovered.	Cystic adenoma.	One month after operation residual, ½ oz.
April, 1906.	Recovered.	Glandular hypertrophy.	Urination normal. No residual.
April, 1906.	Recovered.	Glandular hypertrophy.	June 23. No residual.
May, 1906.	Recovered.		
June, 1906.	Recovered.	Glandular hypertrophy.	June, 1907. Urinates 4 times in day, once at night. "Feels like a boy."
Nov., 1906.	Recovered.	Cysto-adenoma.	No residual. Reported in June, feeling very well, with no discomfort whatever about urination.

No.	Age.	Name.	Residence.	Duration.	Amt. of Obstruction.
27		P.	Brighton, Mass. Private case.	3 years.	Residual, 2 oz. Urinates with difficulty every 2 hours. Several attacks of inflammation with great discomfort.
28	70	L.	Brighton, Mass. Private case.		For 20 years slowness of stream. Of late worse, and required catheter twice a day. Residual, 30 oz.
29	75	O.	Neponset, Mass. Private case.	4 years.	Wears a catheter all the time.
30		W.	Peabody, Mass. Private case.		One year plus; frequency every hour. Residual, 15 oz.
31		F.	Westboro, Mass. Private case.	5 years.	Residual, 2–4 oz. Used catheter occasionally.
32	72	H.	Maine. Private case.	15 years.	For past 2 years used catheter chiefly. Residual, 12 oz.
33	65	W.	Wellesley Farms, Mass. Private case.	10 years.	Suprapubic in 1899. Difficulty returned until dependent on catheter, using 8 times in 24 hours.
34	65	C.	Brookline, Mass. Private case.	6 years.	Bladder difficulty, catarrh, etc. Catheter twice a day.
35		W.	Tyngsboro, Mass. Private case.	About 2 years.	Increasing difficulty and occasional retention, requiring catheter.
36		F.	Worcester, Mass. Private case.	4 years.	Gradually increasing slowness of stream. Never pain or frequency. Lately catheter twice a day. Residual, 25 oz.

The symptoms in this case were somewhat difficult to understand, and a neurologist who saw him in consultation thought that his condition indicated a previous apoplectic seizure, which had left some mental deterioration.

Case 14. The first of these patients with chronic bronchitis and glycosuria well illustrates the condition of broken health in which many of these patients come to the surgeon.

Case 15 did not die as an immediate effect of the operation but from some toxemia, as I thought, originally, due to the obstruction in the prostate with its secondary effects on the kidneys. In both cases, however, the operation failed to keep them alive and they should be rated in the mortality risk.

They give a death-rate of 5.5% in this small series of cases. This is somewhat higher than the mortality rate in the statistics of some operators, and higher, I believe, than the normal risk of the operation. I have now had 21 successive recoveries due in part, doubtless, to increased skill in operation and to experience in after-treatment.

Young reports 60 successive cases without a death. In no one of the 33 cases that recovered was there a failure to restore the power of voluntary urination, and in no case was there incontinence. In one case (case 8) the bladder was distended by 83 oz. of urine when he came under treatment. At first, after operation, the residual urine was 17 oz., it had fallen to 5 oz. one month later. He was then lost sight of. He had been freed from the constant thraldom of the catheter, but found its occasional use of advantage in keeping the bladder clean. Case 9 had a residuum of 15½ oz. before operation, and one month after operation was passing urine with a little discomfort and had a residual urine of from 4 to 6 oz.; he was then lost sight of. It is to be remembered that in many cases of prostatectomy the full measure of improvement is not reached for several months.

From these cases and from others I have received the impression that a certain proportion of these patients, whose bladders have been long distended, lose the expulsive force to such a degree that they are afterwards unable to completely void the urine even when the obstruction is wholly removed. This is due not only to the induced atony of the walls but also to the saeculation which forces portions of the mucous membrane out between the muscular bundles so that the sacculi have no contractile tissue in their walls and so are unable to empty themselves when the bladder closes down.

It remains to speak of my experience with rectal injury, which is constantly urged as an opprobrium of the perineal operation. In case 5 the vigorous traction of a retractor tore a rent about an inch long, transversely, across the rectal wall. It was closed with a double row of chromic gut stitches and healed by first intention without causing any trouble. Since that experience I have always covered the rectum with the end of a gauze sponge and have found this a perfect protection. In case 17, an old and broken man of seventy-eight, who had had a partial prostatectomy by the suprapubic route eight years before,

Date of Op.	Result.	Pathology.	Condition after Recovery.
Nov., 1906.	Recovered.	Glandular hyperplasia with retention cysts.	Seen in June, 1907. Was perfectly well. Passing water normally. Regarded himself as greatly benefited by operation.
Nov., 1906.	Recovered.	Glandular hyperplasia with retention cysts.	In excellent health. Free and comfortable urination, 5 or 6 times in 24 hours.
Dec., 1906.	Recovered.	Glandular hypertrophy.	June, 1907. Urination easy and comfortable, 5 times in day, 3 at night. Has gained weight; in good health.
Jan., 1907.	Recovered.	Glandular hyperplasia with cystic dilatation.	In good health.
Jan., 1907.	Recovered.	Glandular hyperplasia.	
Feb., 1907.	Recovered.	Glandular hypertrophy.	April. Holds urine 6 hours. Feels better than for years.
March, 1907.	Recovered.	Glandular and fibrous hypertrophy.	April. Residual, 3½ oz. Urination every 2 hours in day, twice at night.
March, 1907.	Recovered.	Glandular and fibrous hypertrophy.	April. Residual, 3 oz.
March, 1907.	Recovered.	Glandular hypertrophy.	June, 1907. No difficulty in urination. No frequency in day, once in night.
June, 1907.	Recovered.	Glandular hypertrophy.	

was greatly troubled by a persistent suprapubic fistula. For six years he passed water unsatisfactorily by the natural efforts, but for two years he had returned to the use of the catheter. In the hope of relief from his fistula he decided upon further operation. The effect of the former operation seemed to have been to fix the prostate rather high in the pelvis so that it was more than usually difficult to reach from the perineum. The hemorrhage was no more than it often is, but the already feeble condition of the patient caused apprehension on this score, and after he was in bed an extra gauze was packed into the outer wound. The pressure of this led to a slough in the rectal wall which caused a fistula that was slow to heal and greatly prolonged the convalescence. Voluntary urination was re-established and the suprapubic fistula closed, but there continued to be a considerable leakage into the rectum. In both of these cases the injury to the rectum was due to lack of experience on my part and in both cases the difficulty was preventable.

Preparatory treatment. — It often happens that these patients reach the surgeon in a condition very unfavorable for operation. The two fatal cases illustrate this. Other cases which seemed equally unfavorable were so improved by preparatory treatment as to bear the operation perfectly. Case 25 was an example of a severe cystitis with probably pyelonephritis and certainly uremia, who required one month of preparation before operation could be safely undertaken.

Case 25. Mr. F., sixty-three years of age. Seen by me May 11, 1906. For two years he had had increasing frequency and difficulty in urination. Six weeks before I saw him the difficulty of urination had greatly increased and required the constant use of a catheter. For several days he had had fever and nausea. He was of feeble muscular development though he had had but little illness during his life. Examination showed him to be mentally confused, with a feeble, irregular pulse, a dry, brown tongue, anorexia and persistent nausea. The bladder could be felt moderately distended and the prostate was smoothly and evenly enlarged. The catheter passed easily and drew about a pint of very cloudy urine and at the end about 2 oz. of pus flowed out. The catheter was fastened in for constant drainage. Liquid diet with as much water as he could comfortably take. First twenty-four hours, 60 oz. of urine, much clearer than had been drawn at entrance. Specific gravity 1,008, albumin trace, urea 19 gm. The urine quickly increased in amount up to 120 oz., and his power of taking food improved, but slight occasional nausea with a dry tongue persisted for a long time. Finally, at the end of a month, during most of which time the amount of urine had remained above 100 oz., the tongue cleared off, the pulse became steady at about 70 and perineal prostatectomy was done.

Pathological report: Glandular hypertrophy with retention cysts.

Convalescence was slow but steady. This patient was up in five days but the wound healed very slowly. Reported in November: "Passes water four times in day, once in ngiht." "Feels like a boy." Case 12 was an instance of glycosuria which was so improved by treatment that a prostatectomy was well borne.

The accompanying table gives the essential details of this series of cases.

THE REACTION OF SOME MILK MODIFICATIONS TO RENNET.

BY H. ILLOWAY, M.D., NEW YORK.

IN the course of the examination of the gastric chemical processes, the examination for pepsin or pepsinogen and for rennet or labzymogen has become with me part of the regular routine.

The method employed for rennet is that of Leo, namely, the addition of a few drops of gastric filtrate to a certain quantity of milk.

On one occasion, on a Sunday, being anxious to complete the examination for a patient who was about to depart, and not having any liquid milk at hand, and being unable to obtain any (the stores being already closed), I took some fresh condensed milk (unsweetened)[1] which was in the house, and making a solution of what I deemed the proper strength, made use of that. Apparently no reaction followed. The fluid remained fluid, even after standing in the thermostat at a temperature of 40° C. a much longer time than is ordinarily required with fluid milk.[2]

No result having been obtained, I was uncertain whether this was because of the character of the milk or because the gastric filtrate had spoiled. However, a retrial of the latter the next morning demonstrated that it was in good condition and the rennet therein very active, a proper rennet cake (Labkuchen) being promptly formed.

The fault lay therefore in the milk.

I repeated the experiment with the solution of condensed milk several times, but always with the same result, — no reaction apparently, the fluid remaining (as shown by a jarring of the thermostat) fluid.

Without any further inquiry into the matter I concluded that for some reason, to me then unknown, this form of milk was not adapted to this special purpose, to wit, testing for rennet, and I did not use it so again.

Last year, 1906, a rather striking incident occurred in the course of practice that recalled my former experiences with condensed milk, and thereupon I concluded to make a careful investigation of the action of rennet upon this form of milk modification.

The method employed was that of Leo, but with the extensions thereof made by myself, as described in the article already referred to.[3]

The gastric filtrates used in these investigations were all tried by preceding control tests, and only those found normally active[4] were employed.

A. CONDENSED MILK (unsweetened).

The first three examinations are of a series made at longer intervals and not *seriatim* as regards the quantity of gastric filtrate used.

No. I. One Teaspoonful of Condensed Milk to 4 Oz. of Water.

(*a*) 20 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 5 cc. of gastric filtrate.

Result:

(*b*) In eight minutes coagulation of the casein in very fine, minute flocculi. On removing the glass from the thermostat and letting the mixture stand a little while longer, the flocculi sink to the bottom, forming a rather granular looking layer, and the serum floats on top. Shaken, they mix again and well with the serum.

(*a*) In twenty minutes there was coagulation of the casein in fine, minute flocculi, but not separated from the serum. After standing for some time, the flocculi began to settle at the bottom, but on the whole the separation was not so complete as in *b*.

No. II. One Teaspoonful of Condensed Milk to 6 Teaspoonfuls of Water.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.

Result: The process was slow.[5]

(*a*) In about forty minutes.
(*b*) In seventy-five minutes.

The reaction was the same as obtained in No. I, to wit, a coagulation of the casein in very fine, minute flocculi which remained in the serum, and only after quite a time tended to settle at the bottom.

No. III. Same Solution.

(*a*) 10 cc. of milk + ½ cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.

Result: In thirty minutes the reaction occurred in both, coagulation of the casein in very fine, minute flocculi. Allowed to remain in the thermostat for a further half hour, the mixture showed no change.

The following three tests, a retrial to verify the results obtained in the first series, were made at brief intervals and *seriatim* as to the quantity of gastric filtrate used.

No. IV. Same Solution.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.

Result:

(*a*) In forty-five minutes coagulation of the casein in very fine, minute flocculi.

(*b*) In one hour, the same result.

After standing some time the mixture separated into layers, floccular at the bottom, serum on the top.

No. V. Same Solution.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.

Result: In forty-five minutes, in both, coagulation of the casein in very fine, minute flocculi, as in No. IV.

No. VI. Same Solution.

20 cc. of milk + 5 cc. of gastric filtrate.

Result: In twenty-five minutes a coagulation of the casein in fine, minute flocculi, as in all the preceding tests.

The results of these various tests demonstrate that in this form of milk the addition thereto of

[1] Such as is delivered every morning in small glass jars.
[2] Archiv. für Verdauungskrankh., Bd. 11. Illoway: "Einfache Methoden zur quantitativen Bestimmung der vom Magen ausgeschiedenen Enzyme."
[3] *Loc. cit.*
[4] *Loc. cit.*
[5] *Ibid.*

rennet produces the same form of casein coagulation as obtains in the human mother's milk.

This was the reason why I failed to obtain the characteristic reaction resulting in ordinary milk to which I had become accustomed.

The question now arose, Would the *sweetened* condensed milk react in the same way?

B. CONDENSED MILK (sweetened, in tin cans).[6]

No. I. One Teaspoonful of Milk to 6 Teaspoonfuls of Water.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result: The process was slow.
(*a*) In one hour coagulation of the casein in fine flocculi,
(*b*) In about one hour and three quarters.
The flocculi, though very small, were, nevertheless, somewhat larger than those resulting in the unsweetened milk.

After being placed in the thermostat, the whole became a little thicker (more syrupy) than the unsweetened milk.

No. II. Same Solution.

(*a*) 10 cc. of milk + ½ cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.
Result: Same as in No. III, Series A, the only difference being that the flocculi resulting were slightly larger, as already recorded with No. I of this series.

Repetition of tests for verification.

No. III. Same Solution.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result:
(*a*) In forty-five minutes coagulation in fine flocculi.
(*b*) In one hour coagulation in fine flocculi, the flocculi slightly larger than those obtained in No. IV, Series A.

No. IV. Same Solution.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.
Result: In thirty-five minutes coagulation of the casein in fine flocculi, as already described.

No. V. Same Solution.

20 cc. of milk + 5 cc. of gastric filtrate.
Result: In fifteen minutes coagulation of the casein in fine flocculi.

From the foregoing it is evident that the same result was obtained with the sweetened as with the unsweetened condensed milk, namely, an even coagulation of the casein in fine, very small flocculi which do not precipitate from the serum very readily, but are held intermixed with it for a comparatively long time.

The only difference between these two forms of condensed milk, so far as we are here concerned, is this, that the flocculi are slightly larger in the sweetened than in the unsweetened milk.

[6] Eagle brand was used.

Having gone thus far, it interested me to know how some other milk modifications would be affected, and a series of similar tests was undertaken with these.

C. MODIFIED MILK (commercial).

No. I. Modified Milk for an Infant Two Months Old.[7]

(*a*) 10cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result: In both, coagulation in fine flocculi, like those described as occurring in Series B.

No. II. Modified Milk, 4.6.1.50.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result:
(*a*) In fifteen minutes.
(*b*) In twenty-five minutes.
A regular rennet cake (Labkuchen) formed, though not of such firm texture as in ordinary milk.

No. III. Modified Milk, 4.7.2.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result:
(*a*) In ten minutes.
(*b*) In twenty-five minutes; rennet cake as described in No. II above.
(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result:
(*a*) In twelve minutes.
(*b*) In twenty-five minutes; rennet cake as described.

The reason for the repetition: In the first test a mixed gastric filtrate was used, in the second test a single gastric filtrate. In both No. II and No. III the rennet cake (Labkuchen) had not the smooth, solid texture seen in that formed in ordinary milk, but presented a more loose, a *meshed* appearance.

No. IV. Modified Milk, 4.7.2.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.
Result:
(*a*) In twenty-two minutes thickened; in thirty minutes rennet cake.
(*b*) In thirty minutes thickened; in forty-five minutes rennet cake well formed; in one hour serum separating in both.

No. V. Modified Milk, 4.7.2.

20 cc. of milk + 1 cc. of gastric filtrate.
Result: In twenty minutes the rennet cake was seen at the bottom of the glass and the serum that had separated, above it. In twenty-five minutes rennet cake of fair firmness.

No. VI. Modified Milk, 4.7.2.

20 cc. of milk + 5 cc. of gastric filtrate.
Result: Coagulation of casein set in almost immediately. The mixture being put into the ther-

[7] I had asked for modified milk for this age, and the tag attached to the bottle bore this inscription.

mostat, at the end of ten minutes rennet cake seemed formed and serum separating from it.

The rennet cake was of very loose texture, more an aggregation of large flocculi, and segments could be separated easily by a light shaking of the glass.

No. VII. Modified Milk, 3.6.2.

(*a*) 20 cc. of milk + ½ cc. of gastric filtrate.
Result: After forty minutes coagulation in large flocculi floating loose in serum.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.
Result: In thirty minutes rennet cake formed, but of loose texture, *meshed*, as it were.

D. HOME-MADE MILK MIXTURES.

Fluid milk (from a trustworthy source) ℥ij; lime water, ℥ ss; distilled water, ℥ ss.

No. I.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.
Result:
(*a*) In fifteen minutes rennet cake; not so firm as in undiluted milk; breaks up rather easily.
(*b*) In fifty minutes small masses of coagula seen floating around in the serum.

No. II. Same Mixture.

20 cc. of milk + 5 cc. of gastric filtrate.
Result: In twenty-five minutes a loose looking rennet cake, as if made up of separate masses of coagula; much looser than in undiluted milk, or better, a *meshed* rennet cake.

No. I. Milk, ℥ ij; Distilled Water, ℥ j.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result:
(*a*) In fifteen minutes coagulation; removed from thermostat and allowed to stand for one-half hour; serum beginning to separate, rennet cake firm as in undiluted milk.
(*b*) In forty-five minutes rennet cake, as described above.

No. II. Same Mixture.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.
Result:
(*a*) In eight minutes, coagulation, rennet cake.
(*b*) In twenty-five minutes; in twenty minutes, serum separating.

No. III. Same Solution.

20 cc. of milk + 5 cc. of gastric filtrate.
Result: At the end of fifty-five minutes well-formed rennet cake and serum separated from it, firmer in texture than that resulting in the milk mixture containing lime water, and almost as firm in texture (in appearance) as that produced in undiluted milk.

As to any slight discrepancies in the time of reaction, these must be laid to the account, *firstly*, of the variation in the amount of the casein contained in the different modifications and solutions, and, *secondly*, to that of different gastric filtrates. As I have shown in the article on the quantitative determination of the gastric enzymes, already referred to, the *normal time limit* in which the *normal* reaction is produced in the ordinary liquid milk by gastric filtrates derived from different individuals is not a hard and fixed one, but has a certain range, as there set forth.

The reason for making tests with three different quantities of gastric filtrates was this: the first, the smallest, quantity, to show the character of the reaction, and the two others, the larger quantities, to show how it would be in the stomach, where much larger quantities of the enzyme come in contact with the milk.

It was for this reason mainly, namely, to make the condition as nearly as possible to what it would be in the stomach, that I refrained from neutralizing the larger quantities of gastric filtrate, as is advised by some authors. Moreover, as I have already shown in the article referred to and as can be seen from the tests in the *group D, milk diluted one third with distilled water*, such neutralization is not necessary in so far as the proportions here and there employed are concerned.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

(Continued from No. 13, p. 432.)

IT is to be noted that in these double suicides, often one of the two lovers has motives for killing himself, but jaded by jealousy he persuades the other to imitate him. If life no longer has charms for one of the two, the other without treason will not be able to find it later. Then to this posthumous jealousy becomes joined the egotistical desire for the beloved one to share misfortunes as well as the joys. Here love is not only egotistical, but is also a sacrifice, and the other lover will willingly make the greatest gift that he could offer, that of his life, in order to prove his passion. A young woman of a very quiet character learned that the parents of her lover refused consent to their marriage. When she saw him next time she pointed out to him the great grief of living apart, and then covering him with a thousand caresses she begged him to kill himself as she was to do, saying, "I have decided to die rather than to leave you; give me this proof of love." A large open fire was burning in which they both expired in each other's arms.

In other cases it is the man who, forced to suicide by debts or by some dishonorable action, persuades his mistress to imitate him before killing himself. In one case one of them wrote: "Resolved to finish with life, the wild idea of not dying alone comes to me." The man alone had the motive for killing himself; he persuaded his mistress to imitate him from the fear that after his death she would belong to another. This is a crime by suggestion.

If one believes the explanation upheld by the defense in the case of the double suicide of Chambige and his mistress, it was caused by the desire that the former had not to outlive his dishonesty.

According to this version, which is probably the true one, it was Mrs. N. who had the idea of suicide and imposed it upon Chambige as a condition of their love. We will briefly relate this affair to which we will frequently make allusion.

In the vicinity of Constantine, in a quiet village belonging to an honorable family, pistol shots were heard on a certain day. Upon this the doors were broken open and a young woman was found lying on her bed dead, undressed, her head showing a pistol wound. Beside her lay a young man slightly wounded in the head. The woman belonged to an excellent family, mother of several children, possessing not only a good reputation, but even one of austerity. The man was a young student by the name of Chambige with a restless mind, rendered so by bad literature and friends. Three explanations were at least given for this crime. Chambige gave the following one: Mrs. N. would not outlive her mistake, and imposed as the price of her fall the double suicide. According to one of the explanations proposed by the prosecuting attorney, there was simply rape committed followed by murder; Chambige got his victim into a trap and, after having abused her, killed her. According to still another explanation, Chambige was depraved and mentally low; he was a kind of sadist who wished to procure for himself the sensations of an assassin, according to a statement made by him and which weighed heavily on the minds of the jury.

Occasionally the only motive for a double suicide is jealousy on the part of one of the lovers. Thus the lover of a young married woman, tortured by jealousy that he had for her husband, resolved to kill his mistress and himself. In order to accomplish his end, he described his sufferings to her in such a way that she consented to die with him. She even signed a letter in which they both announced their intention of committing suicide, after which they went out to find the necessary weapon. But, when once in the street, the young woman, regaining her possession, changed her mind and rushed into her house in order to escape her lover. He pursued her, and finding the door locked he climbed in and running up the stairs, rejoined his mistress and shot her, after which he killed himself. One may successively follow all the transitions existing between double suicide and murder. In the last case mentioned, it was not one of double suicide but murder, and another celebrated example will show a still greater separation from voluntary double suicide. In 1889 G. S. fired two shots at his mistress B. G. and then tried to kill himself. The girl died, the assassin lived. It was shown at the trial that for a long time he had endeavored to persuade the girl to kill herself with him, but all in vain. Then, rather than killing himself he did not take into account her refusal and killed her. In this case, S. had tried in the first place to obtain the consent of his victim, but other murderers have not even tried to obtain this consent. Decided to commit suicide they begin by killing the one they love. In a house near Naples there lived a young man, H. A., nineteen years of age, and a young woman with her father. The two young people loved each other, but the father of the girl declared that marriage was impossible. In despair H. A. resolved to kill himself, but before putting an end to his days, he killed the girl. He then fled, took a large dose of arsenic and threw himself out of the window. He died a few days later.

It may happen that the man, after killing the one of whom he is jealous, renounces the idea of killing himself and thus we come back to murder from jealousy, of which we have already spoken.

In a very interesting book by Sighele entitled "Le Crime à Deux," this progression from suicide to crime is made very clear by an excellent table. In consulting this table double suicide wished for and desired by both parties comes first; then after, and already approaching murder, comes suicide, where one of the parties alone has motives for killing himself, the execution of the crime being generally performed by him, in other words, a murderer by persuasion. Then the despairing one begs his companion to commit suicide, but being refused he kills her. In the next class no demand is made, but the crime is committed, and lastly the act is committed from jealousy, but the perpetrator does not kill himself, in which case we have murder, properly speaking.

Jealousy is not the only cause of suicide from love and the motive is often difficult to discover. It is the attraction that death produces over lovers, a kind of "moral vertigo" which seizes them and causes them to express the egotistical desire to die together. The human heart is an unexplored region, and as yet it is impossible to say whether it belongs to the alienist or the psychologist. This need of destruction, in order to better love, seems to have taken possession of the minds of the greatest geniuses; Goethe, Byron, Musset, Vigny, Beaudelaire, were tortured by this thought, and beside poets, no lesser men than Balzac and Renan were also afflicted. These authors have frequently been reproached for expressing these ideas, but in reality one should be more astonished that they had them than otherwise. It is a peculiar disease of the imagination when the thing that man hates the most, namely, death, becomes the object of his desire.

What is the cause of this incomprehensible union of love and death? It is that little by little passion corrodes and finally, when it has invaded everything, it has destroyed all. These unfortunates have no longer anything outside of their love, and this love itself is frequently made a hell of by them; they can no longer live without it, nor with it. They finally renounce life, hoping to find in death an eternal marriage.

Jealousy is not the only sentiment which arms two lovers against each other, and it is often for other reasons that the effects of love more closely resemble those of hatred than those of friendship. In the first place there is the desire of avenging one's honor, the withered honor of a deceived husband, the lost honor of the young girl seduced and abandoned. It is to be understood that this desire of avenging one's honor

does not exclude jealousy, and it is nearly always jealousy of those who have betrayed them, as in the case of the deceived husband or the abandoned girl. But the determining motive which pushes them to crime, that they openly confess to and which is usually true, is the obsession of avenging their honor.

The story of the seduced girl is common and nearly always the same. Generally one is dealing with a coquettish girl, her parents having given her tastes which are disproportionate to her condition, she is more refined than the men of her social class, and she dreams of better things. On the other hand, since her infancy, she has been spoken to of love; it has been laid before her in prose, verse and music, and it finally appears to her that it is the only end in life. Friends, sisters, the parents themselves sometimes, after these dreams, have permitted her to understand the realities. Finally, a man appears upon the scene; he is loved beforehand, he speaks, presses his suit and demands; the fall is soon consummated. He comes to the girl with the egotism of man and his experience. For him love is mere play, and since he is a past master in it he soon comes out conqueror, sometimes astonished by the great ease of his victory and the inexperience of his weak adversary. The illusion, however, is of short duration.

The man promises marriage to his mistress, and for that matter he has promised her most everything else. Then pregnancy occurs. The mistake is forever public, and not only the lover no longer wishes to marry his mistress, but he immediately disappears in order to escape the duties of paternity. What is still worse, it is often to marry another that this man goes away, a cruel injury because it is merited, for the simple reason that the mistress has remained a true woman. The abandonment sums up all the sufferings of the woman, of the mistress and the mother; disdain of her beauty, dishonor, public humiliation, rendered still more painful by the joy of her rival, the loss of the loved one, and, lastly, the fear of approaching misery with a child in her arms. Such are the reasons which have forced seduced girls to avenge themselves, and juries acquit them. Examples are unfortunately far too numerous. "When I heard of the marriage of my lover to another young girl," said a young woman who was being tried for murder, "my exasperation was so great that I formed a project to kill him. I loaded my pistol, disguised myself as a man, and hid myself at a spot where I knew he had to pass. As soon as he came I discharged my pistol at him."

Quite recently, in the month of January, 1903, a young girl, M. C., appeared before the correctional court of the Seine, she having shot her brother-in-law, M. S. He had seduced her at the very beginning of his marriage when she was only sixteen years old. In the month of November, 1902, S. left his home to live with his sister-in-law, but she being on the point of becoming a mother he abandoned her. On the twelfth day of December M. C. went to find him at his home. A discussion commenced, during which S. pretended that he was not the father of the child, and immediately the young girl drew a revolver which she had hidden in her muff and fired at her lover, hitting him in the mouth. At the trial the girl declared that she had no intention of killing her lover. The Court, taking into consideration the circumstances of the case and the motive which had caused the accused to act, merely gave her two months' imprisonment. All this proves that the jury represents faithfully public opinion by acquitting, since magistrates themselves, when the occasion is presented, decide in the same way.

Another dramatic adventure took place at Marseilles a few years ago. An officer of rank in the army, without fortune, had the imprudence to give a taste of luxury to his daughter, whom he adored, and had given her the education of a princess. He had a married brother, a rich business man at Nice, but without children. The latter came to see his brother, the officer, and proposed taking his daughter with him to Nice. The father consented and the uncle started with his niece. She was pretty, vivacious and gay. His wife was no longer either pretty, or young. It was not long before he felt the charms of youth and beauty and he fell desperately in love with the girl. She, being very much spoiled by her uncle, who satisfied her luxurious tastes, and very sensible to the affection with which he surrounded her, the nature of which she did not understand, did not know how to defend herself against the plot of which she was the object. Her uncle, abusing her confidence and innocence, finally overcame her last scruples by promising her that her honor would be perfectly safe in the eyes of the world. However, pregnancy occurred and along with it her dishonor.

Upon learning this news her father died broken-hearted, and soon after this the mother killed herself. When the child was born the uncle wished to separate himself from his niece; after having wished to marry her he turned her out announcing his intention of placing the child in a foundling hospital. This project exasperated the girl. She bought a revolver; her lover allowed her to do so hoping that she would commit suicide, but this hoped-for event did not occur; she came to her uncle and reproached him for his dishonor, but the uncle merely shrugged his shoulders, saying that he did not like romance and that she was playing comedy. This reply was too much, and seizing her revolver she fired on her seducer and continued pouring bullets into him. Then, suddenly, her anger fell and love reappeared. She threw herself tenderly upon him and sponging away the blood covered him with kisses. The uncle died from his wounds and the young girl was acquitted by the jury.

In this case the existence of the child held a prominent place beside that of jealousy in the motive of the crime, and we will mention other cases where the future of the child was the cause of the crime committed by a woman on her lover, her husband, or her husband's mistress.

In 1880 Countess de T. appeared before the

jury, having supported with resignation and patience her husband's infidelities. He had as a mistress a young dressmaker, M. M., who did everything that was in her power to make herself odious to his legitimate wife. One of her favorite pastimes was to have herself called Countess, the title of her lover's wife. Countess de T. would, without a doubt, have continued her martyrdom in silence had she not learned of her husband's intention of marrying M. M. as soon as he was a widower or divorced. The thought that this girl would take her place and become the mother of her children made her absolutely beside herself, and she ended by disfiguring her by throwing vitriol in her face. To the jury she said: "I wished to disfigure this woman, not because she was my husband's mistress, nor because she covered my family name with dishonor, but for the reason that when I was dead she would become the mother of my children. . . . In a second the souvenir of all that I had suffered came upon me, the perspective of all the humiliation that was awaiting my poor children — all this made me crazy." The jury rendered a verdict of not guilty and she was acquitted.

This drama, which greatly worked up public opinion twenty-five years ago, shared the attention with quite another as celebrated, namely, the tentative at murder of her lover committed by Marie Bière. Here again we are dealing with a case of murder caused by maternal love and not by jealousy, with this difference, nevertheless, that Countess de T. wished to defend her children, while Marie Bière wished to revenge hers. Marie Bière was a young actress, and at the time she met M. G. she had already had several *liaisons*. He was a rich, skeptical Parisian. He was desirous of merely exchanging fantasies, so to speak. Soon afterwards they separated in a friendly way without any disagreement or scandal, as is the custom in a certain society, where one knows how to amuse oneself. M. G., however, was not aware of the exalted nature of the woman, and this little romance was the most serious event in her life. As soon as M. G. discovered this passion, he wished to break off all relations, because he was a well balanced man and feared scandal above all things.

On the contrary, Marie became more and more exalted and the birth of a child finally complicated the situation. For a time she had thought of having an abortion performed, but renounced the idea. After its birth the baby was sent to the country to be cared for upon the advice of M. G. The baby died from poor care, and then the idea of vengeance began to develop in the unbalanced mind of Marie. She decided to avenge her child because it died on account of the father's fault, and according to her own expression, she condemned G. to death and wrote this condemnation on the back of his photograph which she had in her possession. She met M. G., however, several times, but did not dare to execute her project, and it was only several days later, Jan. 7, 1880, that she executed her vengeance that she had planned more than a year previously.

Dr. Blanche, who examined the mental condition of the woman, concluded as follows: "When the accused fired at M. G. she knew what she did, but she was at the time under the influence of such passion and morbid excitement that it was very difficult for her to resist those sentiments which dominated her and obliterated her moral sense."

In both of the two foregoing crimes it would seem that the thought of the child was the determining motive, but it is quite certain that jealousy played an important part, especially in the last case.

Husbands will act, not only from jealousy, but also from the desire of avenging their honor. Without trying to justify this idea it should be pointed out that public opinion considers a deceived husband as dishonored. We do not wish to uphold a husband who kills his wife for adultery, His act is a crime, and although one may pity him, he should be condemned. Legislators have seemed to uphold the murder of the wife, for adultery, by her husband as excusable when the latter discovers her in the act. This excuse may perhaps be attributed to the idea that the legislator allows the husband to avenge his honor, because if it was a case of jealousy, one could not readily understand why this excuse should be reserved to the husbaand and not for the wife as well. A few years ago a husband killed his wife's lover and the trial showed that a short time before he had used threatening words which explained the motive of his crime: "I will take his life or mine; I must kill him, he dishonored me."

It sometimes happens that a husband obeys a less noble motive: he is afraid of being ridiculed and prefers to kill two beings in cold blood rather than to be joked about. This latter case assuredly can never claim the same indulgence as a crime from passion, but it is most evident that it would often be very difficult for a jury to recognize the two motives which caused the crime to be committed.

(To be continued.)

Reports of Societies.

AMERICAN PEDIATRIC SOCIETY.

NINETEENTH ANNUAL MEETING, WASHINGTON, D. C., MAY 7, 8 AND 9, 1907.

FIRST DAY'S SESSION.

THE USE IN PRACTICE OF THE THEORETICAL RESOURCES PROVIDED BY PERCENTAGE FEEDING.

DR. CHARLES HUNTER DUNN, Boston, said the chief step in advance had been the chemical recognition of the component elements of milk and the attempts to imitate nature as exactly as possible; the second great step was the recognition of the individual idiosyncrasies of each baby. The fact remained, however, that the subject of percentage feeding still presented difficulties to the general profession. The failure of modified milk feeding must be due either to limitations in the value of the resources or their improper application, and the writer suggested that it was due to the latter, and presented a plea for more careful use of the methods already in our possession. He thought the

difficulties due to two factors: the inherent unsuitability of cow's milk to the digestion of the infant, and the variability of the digestive powers of different infants. Too much stress had been laid upon the first and too little upon the second; we were too apt to attribute the chief rôle to the unsuitability of cow's milk. He referred particularly to the use of the so-called split proteid feeding, and thought that by using whey a very close conformity to human milk could be had. The cereal diluents, he said, contained starch, which was not indicated by nature as desirable for the infant, and in practice the giving of these diluents was often protested against by nature, although, of course, in many the starch would be digested. When the starch digestion function had been developed, of course they could be used. The same arguments as those against the indiscriminate use of cereal diluents were applicable to the widely advocated use of the alkalies, lime water, sodium bicarbonate, stearate, etc. Any of these artificial methods might have a place in certain individual cases, but must be due to the individual idiosyncrasies of digestion.

SOME CONCLUSIONS FROM OUR KNOWLEDGE OF THE PROTEIDS OF MILK.

Dr. Thomas S. Southworth, New York, spoke of the early misconceptions concerning the proteids of milk and the gradual steps of enlightenment which began only with chemical analysis. The endeavor was made to imitate breast milk closely by the so-called modified milk, but it was soon found that many infants were not able to digest the modified milk except when modified to each individual case. There were many difficulties in the way of knowing the composition of breast milk and therefore of comparing it with cow's milk, and our chief knowledge of cow's milk was derived from commercial, not medical, investigation. The writer referred to the close analogy between cheese making and human digestion of milk; the important compounds formed with casein by ferments, alkalies and acids, and the necessity for the recognition of these compounds, both as chemical entities and of the part they play in facilitating the digestion of cow's milk. The real difficulty in infant feeding was not with the digestion of casein, but of para-casein. Lactate of casein was readily digestible, as shown by the use of buttermilk, which had had less vogue in this country than abroad. Decalcified casein was easier of digestion, and sodium citrate made milk more digestible by decalcifying it. The writer thought a new departure was necessary if students were to learn to feed intelligently and be enabled to overcome the difficulties they met with in practice. An understanding was necessary of the physiological and the pathological digestion of the elements of cow's milk if empiricism was to give way to intelligent scientific methods in infant feeding.

CANE SUGAR FEEDING IN ITS RELATION TO SOME OF THE DISORDERS OF CHILDHOOD.

Dr. Charles G. Kerley, New York: This study was undertaken as the result of an impression the writer had received by the observation of many children that cane sugar was not without harm to many. There was a class of cases defined as sugar susceptibles, usually children of rheumatic or gouty ancestry, with one characteristic peculiar to all, — a tendency to recurrence and to chronicity. He included those who had recurrent persistent colds, asthma, urticaria, eczema, rheumatism and recurrent vomiting. Seventy-eight cases comprised the cases, 15 from his own patients, whom he had cared for from infancy. Recurrent vomiting in 8; eczema, 7; asthma, 4; frequent colds, 17; chorea, 11; rheumatism, 4; rheumatism and endocarditis, 6; urticaria, 2; recurrent bronchitis, 6. More sugar was taken than was for the best interest of the individual cases because of the craving of child life for sweets and because the sugar-eating habit is so easily acquired. In the majority there was sugar incapacity. When a child was presented for treatment, cane sugar was excluded from the diet and a small quantity of saccharine substituted. They very soon adapted themselves to the deprivation of sugars from cereals, and it did not appear to influence their well being or growth. In those suffering from rheumatism, recurrent vomiting, eczema and asthma there was also interrupted medication. The most satisfactory results were obtained in the affections of the upper respiratory tract. Absence from free sugar in the diet broke up the tendency to recurrent colds in children in whom the removal of the tonsils and adenoids had been without benefit. The writer concluded that free sugar was sufficiently toxic in certain individual infants to produce perversion of function, and in some to allow bacterial invasion, as in acute articular rheumatism and endocarditis.

Dr. Thomas Morgan Rotch, Boston, thought these investigations of Dr. Southworth's of great importance as tending to put the subject of percentage feeding on a proper basis.

Dr. Freeman, Boston, considered the use of whey fluid one of the most valuable aids in difficult cases, and thought it should be ordered from the laboratories where that was possible. It was important that it had been shown that these recurrent colds in children might be due to indigestion and not to exposure.

Dr. L. Emmett Holt, New York, had been following out Dr. Dunn's suggestions with reference to the routine use of whey mixtures for very young infants, and had been surprised to see how it relieved chronic constipation. The proteids could be raised gradually, the fats being kept low, with relief of indigestion and avoidance of troublesome symptoms. He agreed with Dr. Freeman that the mixtures should be ordered from the laboratories. He agreed with Dr. Kerley as to the ill effects of free sugar in the diet of many infants.

Dr. Charles G. Kerley had used the whey mixtures extensively for two years and felt that while it was a very useful measure, applicable in a considerable number of cases, it was by no means a solution of the infant feeding problem, its chief fault being that children did not gain on it. He thought it could not always be relied upon.

Dr. J. P. Crozer Griffith called attention to the recent studies upon the difficulty of digesting foreign albumins, and said the albumins of the cow were necessarily not the same and not so digestible as those of the mother; there were certain principles in the mother's milk necessary to the digestion of many children and they could not get along without it.

Dr. F. S. Churchill, Chicago, did not see how any one who had used the split proteids or whey mixtures could help being enthusiastic believers, because the majority of babies so fed invariably do well. Whey mixture was such a simple food that few babies could fail to digest it.

Dr. Walter Lester Carr, New York, said Dr. Kerley's statement was borne out by his own experience, that whey had a decided place in the feeding of premature infants and congenitally weak children, but that after using it for a time it seemed impossible to get a gain of weight. In eliminating the sugar it must be borne in mind that faulty oxidation might be one of the features.

Dr. Eaton deprecated the habit prevalent in some parts of the country of feeding babies according to a set of tables without regard to the individual idiosyn-

crasies. He had used the whey mixtures with great satisfaction.

Dr. Saunders had used the whey mixture for many years with great satisfaction. One of the mixtures with which he had had most rapid gain was that of whey and condensed milk.

Dr. Crandall's experience bore out what Dr. Kerley had said as to the use of the whey mixture.

Dr. Dunn, in closing, called attention to the fact that some of the cases that seemed to do well on condensed milk had done even better when fed on a laboratory prescription of the same composition.

Dr. Southworth added his testimony to the value of the split proteid feeding; he had had excellent results with it.

A CASE OF HEMATHORAX. ASPIRATION. RECOVERY.

Dr. W. P. Northrup, New York, reported this case, the patient having been seen three times by a well-known member of the society, who pronounced it bronchitis. He saw the case after the child had been ill two months. A poorly developed child of five months, pale, respirations 80 a minute; left chest flat; heart displaced to the right; no fever. Taking the infant on a pillow on its back nothing happened as long as it lay quiet, but when turned toward the right the child had an attack suggesting the cessation of all vital functions. X-ray showed the chest filled with an opaque fluid. Two ounces of a black fluid was aspirated, when the pulse improved and the heart returned to its normal position. The fluid was blood, which coagulated quickly in the bottle. A year after the aspiration the patient is doing well, the only cause for anxiety being rapid respiration.

ANOREXIA NERVOSA IN CHILDREN.

Dr. F. Forchheimer, Cincinnati, presented this paper, which referred to the several previously reported cases under somewhat different names, the condition having been usually looked upon as one of the manifestations of hysteria. According to the present state of our knowledge, we were justified in calling it a neurosis. As a rule, the children who have the disease have grown up without discipline, being allowed to choose their own diet.

Female, seven years, mother and father both neurotic; child always had its own way; at the age of six made up her mind that she would not eat but certain articles, practically nothing but cheese; none of the stigmata of hysteria were present; she was intelligent and consistent in her responses. Under proper treatment she soon recovered.

Female, aged twelve, mother and father neurotic; child brought up on artificial food; would eat only pickles and olives; if they tried to get her to eat anything else she vomited. Was very much run down, irritable and cross, backward in studies, cried easily and slept badly. Under proper treatment she gained fifteen pounds in a few weeks.

Male infant, one year of age, mother and father neurotic; father had had syphilis. Child had never been ill in any way; breast fed. From the ninth month attempts made to feed artificially. The child would not take any food. Was taken to the hospital and for four days nothing given by the mouth; then feeding began, but in vain; child would take water, but nothing else. Gavage used for two weeks, when the child recovered.

Boy three years old, only child of parents married late in life. Neither of the parents believed in disciplining the child. For some time the boy had been cutting off articles of diet until he would touch nothing for several days, except a piece of fried bacon or a piece of banana. Had a degree of emaciation that the writer had rarely seen surpassed. Three weeks later the child died from starvation. The writer believes all these cases could be cured by proper treatment and discipline, especial stress being laid upon discipline. Gavage should be held out as a last resource.

Dr. Charles G. Kerley, New York, had had a case of a four-year-old girl who always vomited food even at the table, but who, when allowed to eat in the kitchen, never had these attacks. The child was finally cured by removal to the house of her aunt and association with other children.

Dr. Putnam, Boston, had often succeeded in the milder forms of this disease by having the parents desist from saying anything about food or trying to force the child to eat.

Dr. J. P. Crozer Griffith referred to a case, a child of a physician, some months over a year of age, who could not be weaned and in which gavage had to be used, and now at the age of four they still had difficulty in getting the child to take food.

(*a*) THREE CASES ILLUSTRATING TYPHOID FEVER IN THE FIRST YEAR OF LIFE. (*b*) A CASE OF ARTICULAR RHEUMATISM IN AN INFANT. (*c*) A CASE OF CONGENITAL BILIARY CIRRHOSIS.

Dr. J. P. Crozer Griffith, Philadelphia, presented these cases: three cases of typhoid fever, one of five months and the other two of nine months. In the first case there was an excellent opportunity of studying the beginning of the temperature record, and death occurred from intestinal hemorrhage. There was absence of the step-like rise characteristic of the adult's chart. There was positive Widal, rose spots and enlarged spleen. In the second case, nine months, there was nothing unusual except the instance of relapse with the opportunity of studying the temperature from the beginning to the end of the relapse. It had been the custom of the mother when putting the baby in the tub to cleanse the mouth with the spigot water. Typical spots and enlarged spleen. Third case, nine months; ordinary course; rose spots and enlarged spleen; the history suggested the possibility of persistent house infection. The child was fed partly by breast and partly by unboiled cow's milk; the bottles had been boiled, but the nipples kept in unboiled cold water.

The case of articular rheumatism was a baby five months old, with rheumatism of hands and ankles. Treated with orange juice to exclude scurvy, without effect; under the use of salicylates it gradually recovered.

The case of biliary cirrhosis, five months old; jaundice said to have been present from birth; child lost weight steadily. After being brought to the hospital there was intense jaundice; liver much enlarged; everything possible done to make it gain in weight, but in vain. Black material passed from the bowel, which appeared to be decomposed blood. Child became steadily worse and died; autopsy showed typical cirrhotic liver with the duct of the gall bladder entirely obliterated.

Second Day's Session.

THE PRESIDENT'S ADDRESS: PSEUDO-MASTURBATION IN INFANCY.

Dr. B. K. Rachford, Cincinnati, read this paper, the detailed cases upon which it was founded containing the writer's own cases and a number reported to him by members of the society in response to letters addressed to them. In the discussion of the disease the writer considered age the most important etiological factor, and nearly all of the cases occurred in

female children. The anatomical and physiological condition of the organs of generation of the infant was considered in detail. The external genital organs were well developed in physiological function from birth, although the internal organs were not. For this reason there could be a syndrome complex closely resembling the sexual feeling. True masturbation occurred after the age of ten. True masturbation occurred oftener in males; pseudo-masturbation oftener in females. This might be due to the fact that the toilet of the female child was not as carefully looked after as that of the male, and the greater exposure of the external genital organs of the female. Later it could be classed among the habit neuroses. Environment was of the greatest importance in keeping up the habit. Heredity played a large part in establishing the predisposition, and gouty inheritance might be one of the predisposing causes. Acid condition of the urine had been found to be a frequent cause, as was also constipation. Of 52 cases presented, 25 were cured, and in only 2 was treatment of no avail. The writer was convinced that pseudo-masturbation occurring in children under two would in time get well under almost any form of treatment; the tendency was to spontaneous recovery. There was no connection between pseudo-masturbation in infancy and true masturbation in later life, though the former might tend to develop the latter. There was no connection between pseudo-masturbation and epilepsy, and the writer had never seen these two neuroses co-exist.

DR. JACOBI, New York, did not agree with the essayist that masturbation in infancy and childhood was not the same as the masturbation of adult life; he believed it should be classified with masturbation of more mature life. It showed itself by the same excitement, interrupted respiration, redness, staring eyes, large immobile pupils, perspiration and convulsive twitchings, as in the adult, and he looked upon it as the same condition.

DR. L. EMMETT HOLT, New York, referred to the frequency of the habit in mentally defective children, and considered it the rule with them rather than the exception. He thought the mental defect the cause rather than the result in these cases. He had not seen any case where the mental defect was traceable to the habit. He did not look with favor upon the appliances for mechanical restraint in these cases, nor upon the methods of stripping back the preputial hood. His cases had been nearly all in females.

DR. HENRY KOPLIK, New York, did not believe that true masturbation could exist in the infant because it presupposed intention and a resulting nervous explosion. He had found, as the other speakers had, that the great majority of cases were in females. He considered that the neurotic tendency was the chief factor.

DR. C. G. KERLEY, New York, was in accord with the views expressed in the paper, except that he thought that in cases over four years of age the prognosis was not so favorable. The cases were often discouraging and treatment had to be carried out for a long time. He exhibited an appliance for mechanical restraint that he had found useful.

DR. MAYNARD LADD, Boston, showed a device for mechanical restraint similar to that employed by Dr. Kerley, consisting of a long section with two cross bars, which kept the thighs about one and a half inches apart, while allowing free movement of the legs.

KERNIG'S SIGN IN INFANCY. A STUDY OF TWO THOUSAND CASES.

DR. JOHN LOVETT MORSE, Boston, presented this paper, in which he concludes that Kernig's sign is almost never found in infancy except in meningitis. That its presence in an acute disease justifies, so far as one sign can, the diagnosis of meningitis. That it occurs with equal frequency in all stages of the disease and has no connection with the degree of intracranial pressure. It has no value in diagnosticating between cerebrospinal and tubercular forms of meningitis.

DR. HENRY KOPLIK, New York, agreed with Dr. Morse that Kernig's sign as a diagnostic element in forms of meningitis in infants under two years of age is of very little clinical value. He said the sign should not be confused with a condition of myotonic contraction.

BACTERIOLOGY OF MENINGITIS.

DR. F. S. CHURCHILL, Chicago, read this paper. Only the known bacterial cases were reviewed. Six cases showed meningococcus; one case pneumococcus; one case pneumococcus in the spinal fluid; one case primary tubercle bacilli; one, Klebs-Loeffler bacillus; one case syphilitic; four undetermined cocci; four no organisms in the spinal fluid. The meninges, like other parts of the body, might be attacked by a variety of organisms; 80% of the trouble due to meningococcus. Next to the meningococcus, pneumococcus was the most frequent cause. Mode of access to the meninges through the throat and nose. Diagnosis between the different types could not be made from the clinical picture, but only from spinal puncture. Mixed infections were infrequent. The organism could be found in the nose and throat of healthy individuals living in close proximity to patients ill with meningitis, and these patients should be isolated. The meningococcic cases should always be quarantined and probably the pneumococcic ones.

GRIP MENINGITIS.

DR. SAMUEL S. ADAMS, Washington, reported this case. The child when first seen, being supposed to have an attack of indigestion, had a temperature of 106°, pulse 140, and the writer made the diagnosis of grip, which was confirmed by several eminent consultants. Complained of headache and of being tired. Blood examination showed nothing of importance. An otologist excluded any disease of the middle ear. Then Kernig's sign developed; symptoms of meningitis; lumbar puncture performed; two ounces of fluid withdrawn, which showed the presence of influenza bacillus. This was the first case reported by an American in which the diagnosis had been confirmed by finding the organism in the fluid of lumbar puncture.

DR. HENRY KOPLIK, New York, said he had before mentioned a case similar to this of Dr. Adams's and had since had another case.

DR. L. E. LAFETRA, New York, reported a case of tubercular meningitis with a terminal infection of pneumococcus; also a case in which at autopsy the influenza bacillus was recovered in the pus.

DR. L. LOVETT MORSE, Boston, disagreed with Dr. Churchill as to the necessity of isolating meningitis cases; he did not believe the danger of contagion was very great.

DR. HAMILL, Boston, reported a case in which the tubercle bacilli was isolated from the spinal fluid, with recovery of the patient. He agreed with Dr. Churchill as to the necessity of isolating these cases.

DR. JACOBI, New York, agreed with Dr. Morse that it was not practicable to isolate these cases.

CONGENITAL STENOSIS OF THE DUODENUM. REPORT OF CASE.

DR. H. L. K. SHAW and DR. LEON BALDAUF, Albany, presented this case of congenital stenosis of the duo-

denum, exhibiting photographs of the condition and the specimen. Child born after normal labor; twelve hours after birth passed miconium; placed at breast and vomited small amount of greenish fluid sometime later. During next two days vomited greenish fluid a number of times; seemed hungry and cried as if in severe pain; nursing discontinued and barley water and whey substituted; miconium and some brownish fluid passed. Operative procedure postponed in the hope that the condition might be spastic. Ten days after birth had lost 2¼ lb. Died thirteenth day after birth. There was stenosis of the bowel below the opening of the bile duct.

Third Day's Session.

THE CALORIC VALUE OF MODIFIED MILK IN ITS RELATION TO INFANT FEEDING.

Dr. Maynard Ladd, Boston, read this paper, which consisted of a series of cases studied by the writer in which the rate of growth in relation to the number of calories taken had been estimated. The series comprised twenty cases and tables were shown exhibiting the weight development. Great variation was noted between the calories taken and the gain in weight, and the writer concluded that the calories in the food of the infant in the first year of life could not be furnished by fats and proteids vicariously; that a given number of calories did not necessarily cause the same rate of growth, even when of the same age and development; that the caloric value of the food is not the most important consideration in determining the quality of the infant's food. Neither the number of calories nor the energy quotient, could be determined accurately.

Dr. L. Lovett Morse, Boston, considered the American method of feeding better than the German, but thought the good points should be taken from both. He estimated the food in calories from time to time chiefly to make sure sure in cases of difficult feeding that he did not get the total amount too low.

Dr. Henry Koplik, New York, called attention to the amount of waste in the gut, which he said was absolutely undeterminable. He thought that the percentage method was not the only way of feeding a baby successfully; in buttermilk feeding, even though the percentage food contained more calories, the waste in the gut in liberating the food was such that the baby might do better on buttermilk.

Dr. Freeman, New York, deprecated the tendency to feed the babies on proteids of less than 1%, and thought that if attention were paid to the matter of caloric values better standards would be obtained.

Dr. L. E. LaFetra, New York, emphasized the points made by Dr. Morse and Dr. Freeman and thought it would be enlightening if we could determine the lower limits of caloric value to be supplied by the proteids; the upper limits could be determined by the digestive capacity of the infant.

Dr. Thomas Morgan Rotch, Boston, protested against the habit of speaking of any method as an ideal method. Cases should not be treated with any on method alone. What should be insisted upon was that the method used should be exact.

A CASE OF MYXEDEMA.

Dr. George N. Acker, Washington, presented this case, which was a child healthy until eighteen months of age, when he presented it to the society in Raleigh in 1903; it was then a typical case of myxedema. It had been upon thyroid since and was now a well-developed child and in good condition. Gained seven inches during the first year; height now forty-one inches.

THE SYMPTOMS OF STATUS LYMPHATICUS IN INFANTS AND YOUNG CHILDREN.

Dr. John Howland, New York, had observed over twenty-five cases during the last year. No gland weighing less than 10 gm. was considered pathological, the average weight of the gland during the first two years being 6 gm. To be on the safe side he had included none weighing less than 15 gm. All the tissues of the body were hyperplastic, including tonsils and adenoids. The changes consisted of a hyperplasia of tissue normally present. Symptoms were, sudden death at beginning of anesthesia, administration of antitoxin, or the child might die suddenly in bed; another group, the characteristic symptoms were, with or without some indisposition the child becomes suddenly ill, rapid, gasping respiration, with cyanosis, attacks of convulsions, temperature in majority very high, 104.7°. The dyspnea not an obstructive dyspnea, but toxic in character. These cases were usually called acute congestive bronchopneumonia. A rarer form were those cases associated with purpura.

Dr. Blackader, Montreal, had had a very painful experience with one of these obscure cases, in which death had been attributed to change of nurses; autopsy showed a greatly enlarged thymus, 18 or 20 gm.

Dr. Thomas Morgan Rotch, Boston, said this was a subject the knowledge of which should be more widespread as the cases were often not recognized.

Dr. S. M. Hamill, Boston, was glad to hear the writer take the view that these cases were of toxic origin. There was great similarity between the condition and the infections — in the character of the dyspnea, its irregular nature, and in the cyanosis and convulsive seizures.

Dr. Howland, in closing, said he had not observed a case that had recovered, except the one in which the thymus acted as a foreign body, obstructing respiration.

A STUDY OF THE EARLY CONDITIONS OF OSTEOMYELITIS IN YOUNG CHILDREN BY THE ROENTGEN RAY.

Dr. Thomas Morgan Rotch, Boston, had been making a study of this condition by means of the x-ray, for he had concluded that delay in diagnosis, as in appendicitis, might mean death, or deformity that could not be remedied. To accomplish this early diagnosis the x-ray was of inestimable value, and in a number of cases it could only be diagnosed by that means. The x-ray should be used at once with the earliest appearance of the symptoms. Photographs illustrating the writer's remarks were shown, and he enunciated the importance of remembering that cases of osteomyelitis were not so rare, and that in most cases early operation was what would save the limb from deformity and, in many cases, save the child's life.

Dr. Samuel Adams, Washington, thought that in most cases the physician was more capable of making a correct diagnosis in these cases than the surgeon, and deprecated the habit of turning the cases over to the surgeon until every means of clinical diagnosis, including the x-ray had been utilized.

Dr. F. S. Churchill, Chicago, agreed with Dr. Adams as to the attitude of the physician towards the surgeon in these cases, and reported a case occurring in a girl of eight years, involving both tibia, both radii and the forehead, following in the wake of a severe typhoid. Typhoid Bacilli recovered from the pus at operation.

Dr. L. E. LaFetra, New York, emphasized the fact that these cases are not infrequent; he had seen ten in

in the last five years. Early treatment in these cases would save the limb.

DR. THOMAS MORGAN ROTCH, Boston, thought the expert opinion of both surgeon and laboratory man was of the greatest importance, and he had a very strong faith in the surgeon. It was only by a combination of all these opinions that the best results could be obtained.

A CASE OF CHYLOTHORAX.

DR. C. G. JENNINGS, Cincinnati, reported this case: a child, nine years of age, presented himself with dyspnea. An acute catarrhal affection some weeks before and following that persistent fever and symptoms that pointed to pneumonia. There were physical signs of pleural exudate, and it was thought to be a case of empyema. Aspiration revealed, instead of pus, chyle; first aspiration, 12 oz. Chest aspirated thirteen times and peritoneal cavity once. The child presented practically no symptoms when the fluid was not present. Tuberculin used without reaction. The fluid had all the chemical qualities of chyle and the microscopic picture was that of chyle.

THE NEED OF GREATER ACCURACY IN PRESCRIBING STARCH IN INFANT FEEDING.

DR. MAYNARD LADD, Boston, read this paper, which was designed to bring out one point,—the great indefiniteness of physicians in the use of the cereals. The paper presented a plea for more accurate methods of prescribing starches in percentages as with fats and proteids. In the barley water mixtures there was great variation in the amount of starch contained, and the inaccuracy due to this was responsible for many of the cases in which the child was not supposed to be able to digest starches at all. Formulæ varied from .64% to 6%. Using the minimum or maximum solutions as diluents the amount of starch varied from .51% to 4.8%. The rational thing to do was to give the minimum starch solution in the early months and gradually increase with the age. The Walker-Gordon Laboratories were now prepared to fill prescriptions in this way.

Book Reviews.

The Practice of Obstetrics by American Authors. Edited by CHARLES JEWETT, M.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, New York. Third edition, revised and enlarged. Illustrated with 484 engavings, 46 of which are in colors, and 36 colored plates. New York and Philadelphia: Lea Brothers & Co. 1907.

This third edition of Dr. Jewett's "Practice of Obstetrics" by 17 American contributors comes to us with several additions and improvements. The five chapters contributed by William S. Stone, of New York, have been rewritten. Each has an ample bibliography of the recent literature. A bibliography is to be found also with Vineberg's chapter on abortion and Williams's chapter on puerperal infection; the latter a lengthy and exhaustive treatise of some 47 pages. The portion on symphysiotomy has been revised and is now in most satisfactory shape, both as to matter and illustrations. Sections on vaginal Cesarean section and hebotomy have been added. The chapter on immediate repair of vaginal and vulvar lacerations is hardly specific enough as to operative details; intermediate repair is slighted and immediate closure of cervical tears is advocated in a not too judicial tone.

The book contains a good chapter on puerperal insanity by Allan McLane Hamilton. The hand of the accomplished editor is seen in many parts of the work so that it has more homogeneity than a majority of the "system books."

As to the bookmaking, a deleterious waste of space is to be noted For instance, the table of contents, instead of being printed in very large type and spread over five pages would be easier of reference if printed in smaller type on two pages; the 8 full-page plates, showing different forms of monstrosities placed between pages 336 and 337 might do for a monograph, but are out of place in a textbook. They add to the bulk and weight of the volume, already too great, and by separating the reading matter distract the reader's attention. Plate XX, a very badly colored representation of a vesicular mole, adds nothing to the engraving of the same subject on the following page, and should be left out.

Aside from such minor defects the book is a good one and should maintain its previous popularity.

Surgery of the Rectum. By FRED C. WALLIS, B.A., M.D., B.C., Cantab., F.R.C.S., Surgeon to Charing Cross Hospital, St. Mark's Hospital and the Grosvenor Hospital for Women and Children. New York: William Wood and Co. 1907.

Wallis has written a little book of 165 pages, which contains first and last a good deal of information, — some of it new. The author appears to have discovered the rectum. As he says in his preface, "the first five chapters contain my original views." That is the note of egotism which so permeates the book that the unsuspecting reader is tempted hastily to drop it among the coals. But in spite of errors in taste and a few errors in form the book contains much that is instructive. Wallis seems to have invented the term *ano-rectal ulceration*, a condition which he finds to lie at the bottom of *pruritis ani*, abscesses, fistulæ and other similar conditions. His artist supplies us with wondrous il ustrations of the crypts of Morgagni, the common seat of these ulcerations. Five chapters are concerned with ano-rectal ulcerations, and incidentally the reader is informed that he should attend certain clinics at the Charing Cross and St. Mark's hospitals. Those first five chapters comprise the important part of the book, while the remaining nine chapters deal in a superficial but perfectly coherent and intelligent fashion with such important topics as hemorrhoids, stricture of the rectum, malignant disease of the rectum, etc.

The book is certainly useful and probably is worth the $2.00 which the purchaser must pay for it.

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THE DEVELOPMENT OF GRADUATE TEACHING.

An interesting phase of medical education at this time is the way in which it is extending its domain into the social and to some extent into the political fields. The function of a medical school is rapidly coming to be much more than the education of the individual student for the practice of his profession; in fact, there seems at times to be danger that this primary object may be lost sight of in the expansion which is now everywhere apparent. We have on various occasions commented on the significant part medicine is destined to take in the solution of some of our most knotty social problems, and also of the wide influence it is coming to have in shaping legislation; and it is to the medical schools of the country that we must look for the proper direction of these new and responsible activities.

Another field in which we may properly look for much development in the immediate future is the continued education of physicians in active practice by the medical schools. No one will venture to say that a man's education is complete who has successfully passed through a medical school, and much less will it be asserted that he can by any possibility keep intelligently informed of the progress of medicine, unless he devotes a certain time to the perfecting of his knowledge by other means than the experience of routine practice. To meet this demand within the ranks of the profession itself, graduate courses have been instituted and are in successful operation at many of our best medical schools. These courses are conducted not only during the winter months, but also in the summer, so that the needs of graduate students may be met practically at any time during the calendar year. The perfecting of these courses is one of the highly important functions of the modern medical school, only secondary to the adequate instruction of undergraduates for whom the medical school primarily exists. That there is room for improvement in this graduate teaching is evident, and this may be said entirely without disparagement to the excellent progress which has already been made. The practical branches of medicine are particularly well represented in the graduate schools. Clinical courses are abundant and excellent and serve a most useful purpose; but it is altogether unfortunate that physicians engaged in practice should not have an opportunity to learn what is being done in those branches which do not have so immediate a bearing upon practice, but which are nevertheless of fundamental importance to an understanding of the real problems of medicine. This problem is one of the most important and also one of the most difficult which graduate teaching has to meet. It is apparent that practitioners and many undergraduate students have neither the time and often not the ability to prosecute individual researches in the more theoretical departments of medicine; but it is regrettable that they should be cut off from the possibility of learning at first hand the results of others' investigation, and its bearing on the general problems of clinical medicine. Courses should therefore be given under the auspices of the fundamental branches of medicine, — physiology, anatomy, pathology, pharmacology and chemistry,—which will demonstrate the modern methods of investigation and bring into closer relationship the laboratory and the clinic. Such courses if sufficiently known among practitioners and advanced students and if given at convenient hours would certainly meet with response. The type of course, to which we refer is illustrated by one to be offered this winter at the Harvard Medical School, by Dr. W. T. Porter, professor of comparative physiology, on the "Circulation of the Blood," with demonstrations, open to graduates and such others as may care to attend. The aim of this course is to present in graphic form the result of recent research on this subject with such experiments as are necessary to demonstrate the principles at issue. Such a course as this forms a connecting link between the research laboratory and the working clinic, and should do its part towards filling the gap which exists in far too great a degree between the laboratory and the practical branches. There

is no question that a series of courses on the various laboratory subjects, the object of which is not original research on the part of students, but a demonstration of methods used, and their bearing on the clinical side of medicine, would do much toward a fuller education of physicians and toward a broader conception of the function of graduate teaching in general.

FUTURE POSSIBILITIES OF EXPERT TESTIMONY.

THE present widespread feeling of dissatisfaction with medical expert testimony lends an added interest to Prof. Hugo Münsterberg's suggestions for a possible means of reform. In the September and October numbers of *McClure's Magazine*, Professor Münsterberg contributes articles on the possibility of applying psychological tests in the determination of the credibility of witnesses, and thereby relieving in a measure the present unfortunate state of contradictory evidence. We question whether the means propounded of accomplishing this desirable end will meet with the approval of the legal profession, and whether the time-honored method of cross examination in open court, before a jury, whose main attribute must be common sense in the estimation of testimony, whether of fact or opinion, will forthwith give place to the subtle analysis of the psychologist; nevertheless, such papers as these of Münsterberg are highly suggestive and should not lightly be passed by. The hope expressed in these articles is that the capacity of witnesses for correct observation and similar essential qualities of mind may be determined by psychological experiment, to the manifest advantage of a fair trial.

To substantiate the contention that witnesses of equal honesty may see and in general observe things in a very different way, Münsterberg instituted a series of experiments with his students at Harvard College, which certainly go far toward clearing up many inconsistencies which every trial brings out, and which are often put down to deliberate falsifying on the part of witnesses. In general, it appears from this final series of experiments that the important matter to determine is whether a given witness is capable of correctly recording his sense impressions or, to put the matter in plain language, to what degree he has the power of correct observation, evidently a matter of prime importance in the determination of many matters upon which a jury is finally required to pass judgment. The various inconsistencies of apparently equally honest witnesses are shown to be a natural consequence of varying powers of correct observation. It would therefore further the cause of justice, according to Münsterberg, if through tests at the hands of an expert psychologist, the credibility of a witness could be determined before he appears on the witness stand, to the end that his statements when under oath might then be taken at their true worth. Such a plan is chimerical at the present time, but it is not to be questioned that if the object of a trial is to reach the truth, as far as humanly possible, it becomes evident that no legitimate means which may conduce to that end should be disregarded. Münsterberg believes that experimental psychology has finally reached a stage of development where it may take an active part in the practical affairs of life.

In the second article to which we have referred, entitled "The Third Degree," Münsterberg propounds an ingenious method of getting at the inner life of criminals, and thereby inducing confessions and determining veracity by means of the association of ideas and reaction time. Examples are given which go far toward showing that the secrets of the human mind may be revealed by a comparatively simple method of testing the reaction time of various associations. A case of particular interest is that of a now notorious, self-confessed murderer, who recently figured as the chief witness in a widely advertised western trial, and whose testimony was discredited by the jury, leading to the acquittal of the defendant. By the tests which Münsterberg was permitted to use on this person, he arrived at the definite conclusion that the witness was telling the truth, an opinion which unfortunately found its way into the newspapers before the termination of the trial. Here was a case of great moment in which the common sense of a jury was entirely at variance with the results of scientific tests; naturally, the opinion of the jury prevailed, leading to the discharge of the prisoner.

It is evident that the question involved in this matter is one which must be fairly met. It is essential that our courts of law in their treatment of expert opinion do not depart from precedents long established, except for most sufficient reasons. On the other hand none can observe the present state of affairs, without wishing most cordially for a simple and more definite method of arriving at facts than we now have. It is certainly not impossible that experimental psychology may take a hand in the reform which is demanded on every side. These articles of Professor Münsterberg should be read and pondered.

MEDICAL NOTES.

Cholera in Japan. — Cholera has appeared in Japan, and 1,500 cases were reported up to Sept. 25.

Cholera in Russia. — It is reported that an epidemic of cholera which broke out along the Volga in Russia is spreading and already affects twelve provinces. The deaths are said to reach into the thousands with the greatest mortality in the more thickly populated regions.

Plague in San Francisco. — Dr. Rupert Blue, of the Marine-Hospital Service, and President William Oppuls, of the City Board of Health, are reported to have issued the following statement regarding the plague situation in San Francisco:

"From our knowledge of plague, the prevention of a sudden outbreak in epidemic form can be predicted with assurance; but a certain number of cases will continue to occur for a considerable period in spite of all preventive measures."

Up to the present time there have been upwards of 25 deaths and more than 40 identified cases.

Report of Henry Phipps Institute. — The third annual report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, including Work Done during the Year from Feb. 1, 1905, to Feb. 1, 1906, has been published. The volume is 410 pages in length and enters into much clinical and pathological detail concerning the problems of tuberculosis. This report forms a valuable epitome not only of what has been accomplished by this institute in the investigation of tuberculosis, but also illustrates the possibilities of research in the great field of this one disease.

The Death of Prof. W. O. Atwater. — In the death of Prof. W. O. Atwater, of Wesleyan University, which occurred recently, this country loses a man who has made for himself an enviable reputation in popularizing science. He was sixty-three years old at the time of his death, and for many years had been associated with Wesleyan University. He early became interested in chemistry, particularly in its relation to agriculture, and later took up the study of foods and nutrition, with which much of his later work is identified. He held many public posts, and showed extraordinary ingenuity in carrying out his experimental researches. Perhaps his best known work is that relating to the food value of alcohol. In spite of the extraordinary opposition which his view met at the hands of certain religious organizations and temperance societies, he continued to maintain that alcohol had a certain food value. He was much beloved by those with whom he was brought in contact.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 2, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 28, scarlatina 39, typhoid fever 26, measles 10, tuberculosis 60, smallpox 1.

The death-rate of the reported deaths for the week ending Oct. 2, 1907, was 16.94.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 28, 1907, was 200, against 187 the corresponding week of last year, showing an increase of 13 deaths and making the death-rate for the week 17.11. Of this number 101 were males and 99 were females; 196 were white and 4 colored; 135 were born in the United States, 62 in foreign countries and 3 unknown; 41 were of American parentage, 137 of foreign parentage and 22 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 40 cases and 1 death; scarlatina, 51 cases and 1 death; typhoid fever, 23 cases and 1 death; measles, 12 cases and 0 deaths; tuberculosis, 69 cases and 18 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 19, whooping cough 0, heart disease 10, bronchitis 4 and marasmus 11. There were 14 deaths from violent causes. The number of children who died under one year was 60; the number under five years, 71. The number of persons who died over sixty years of age was 39. The deaths in public institutions were 61.

There were 3 cases and 1 death reported from cerebrospinal meningitis during the week.

Tuberculosis at the Long Island Hospital. — For many years the almshouse hospital at Long Island, Boston Harbor, has been overcrowded with tuberculous patients to the detriment of those suffering from other diseases. This matter has again come up for discussion, and it is to be hoped that unless separate buildings are provided for this class of cases at Long Island, the Consumptives' Hospital's trustees will take as early measures as possible to relieve the present congestion at Long Island.

NEW YORK.

DR. A. W. FERRIS APPOINTED STATE COMMISSIONER IN LUNACY. — Governor Hughes has appointed Dr. Albert Warren Ferris, of New York, President of the State Commission in Lunacy, in the place of Dr. Charles W. Pilgrim, resigned.

STADIUM AT SYRACUSE UNIVERSITY. — During the coming month Syracuse University is to have the formal opening of its great new stadium which has been in the course of erection for the past two years and which represents an outlay of $600,000. The aim of the university authorities is to have the most complete athletic plant in the world, and with this end in view a gymnasium costing $400,000 will be built at the east end of the stadium. This large expenditure for the promotion of athletics has been rendered possible by the generous gifts of John D. Archbold.

OPENING OF COLUMBIA UNIVERSITY. — The opening exercises of the one hundred and fifty-fourth year of Columbia University were held on Sept. 25, when Prof. James Rignall Wheeler delivered the annual address, on "The Idea of the College and the University." At the opening of the medical department, the College of Physicians and Surgeons, on the following day, Dr. George S. Huntington, professor of anatomy, made an address upon "Methods and Scope of Natural Object Teaching in the Medical Course."

SEPTICEMIA WRONGLY ATTRIBUTED TO VACCINATION. — Walter Brown, seven years old, a boy in Brooklyn, died from blood poisoning on Sept. 23, about two weeks after he had been vaccinated in order that he might be allowed to attend public school, and Dr. George D. Barney, his physician, who seems to have reasoned "*post hoc, propter hoc*," refused to sign a death certificate, claiming that the septicemia was due either to impure virus or lack of precautions in performing the vaccination. The Health Department, at whose office the boy was vaccinated, at once investigated the matter, and as the result the chief medical inspector in Brooklyn stated that the death was undoubtedly due to outside infection, for blood poisoning would have developed within three days had it been contracted at vaccination. It was surprising, he said, that, considering the carelessness of parents and children, so few accidents occurred. As many as seventy children were vaccinated from the same bottle as Brown, and hundreds from the vaccine from which this was taken. The virus used by the Health Department is prepared with great care in the department's own laboratory, and in each case of vaccination a new needle and a fresh orangewood stick are employed.

STRAUSS PASTEURIZATION PLANT FOR BRUSSELS. — Nathan Strauss, of New York, who has been attending and taking part in the International Milk Congress at Brussels, has donated a complete pasteurization plant to the city of Brussels. On Sept. 15 the fifteenth summer season of the Strauss pasteurized milk depots in New York was closed. This year there were seventeen of these in operation, the city authorities having co-operated with Mr. Strauss to the extent of furnishing some of the booths from which the milk was dispensed. All the milk stations in public parks and on the recreation piers have now been discontinued for the season, but six of the stations, as has been customary of late, will be maintained throughout the year. These are situated at various points in the most crowded tenement districts of the city.

A HOSPITAL FOR CHINATOWN. — Chinatown is to have a hospital of its own, where the Chinese patients will have Chinese nurses and Chinese physicians to attend them, under the supervision of an American physician. The building is to cost $25,000, and a committee of Chinese merchants will secure the funds. For the last three years the Chinese merchants of the city have been supporting a hospital on Park Street, without the necessary authorization from the state, and recently John S. Cooper and Champe S. Andrews, legal representatives of the Medical Society of the County of New York, paid the hospital a visit. They were politely received by the superintendent, who informed them that there were fifteen physicians on the staff of the institution, all of whom had received certificates from the Chinese consul. Mr. Cooper has authorized the following statement, giving the results of this visit: The consul was, according to his own belief, acting within his rights when he gave out these certificates to the fifteen Chinese doctors. Everything in the matter has been done in the most amicable manner. The consul has recalled all the certificates, and the doctors, who are not ignoramuses by any means, will go before the Medical Board to pass their examinations in the orthodox manner. At present the Park Street Hospital, which is a substantial four-story building, is being remodelled and will be used until a suitable site can be found for the new hospital. The institu-

tion is supported by the Chinese merchants living in Chinatown; they are doing their best to fight the opium habit, and they are the only people in this country who can do it. The whole question has been put before the State Board of Charities, the authorities in Washington, and the district attorney here, and they have all decided to leave the matter in the hands of the County Medical Society to see that the hospital is conducted on established lines for the health of the city. There are now two or three qualified Chinese physicians in New York who can carry on the work until the other men receive their certificates from the board. The whole thing has been very creditable to the charity of the Chinese merchants to the poor of their race, who receive everything free in the hospital.

Obituary.

JOEL W. HYDE, M.D.

DR. JOEL W. HYDE, a prominent gynecologist of Brooklyn, N. Y., died on Sept. 22. He was born in Westbrook, Conn., in 1839, and was graduated from the Yale Medical School in 1861. In the Civil War he served on the staff of Major-Gen. Rufus Saxton and was afterwards surgeon of the 29th Connecticut Regiment, in which capacity he was present at the surrender of Richmond. After settling in Brooklyn he was appointed Brigade Surgeon of the National Guard of New York. For a number of years he was surgeon to the Brooklyn Orphan Asylum and chief medical adviser of the Ætna Life Insurance Company of Hartford and the National Life Insurance Company of Vermont. He was also gynecologist to St. Mary's Hospital, and in 1901 was elected president of the Brooklyn Gynecological Society. At the time of his death he was consulting obstetrician to the Long Island College Hospital and consulting gynecologist to the Bushwick Central Hospital. One of his sons is Dr. Clarence Reginald Hyde, of Brooklyn, also a well-known gynecologist.

Current Literature.

MEDICAL RECORD.
SEPT. 7, 1907.

1. MACKENTY, J. E. *Congenital Occlusion of the Choanæ.*
2. VAN BAGGEN, N. J. *The Misuse of the Voice and Its Cure.*
3. RAUDNITZ, R. W. *The Attitude of Public Health Authorities Regarding the Preservation of Milk by Heat.*
4. *VON RUCK, K. *Sixteen Years' Experience with Tuberculin and with Other Products of the Tubercle Bacillus in the Treatment of Pulmonary Tuberculosis.*
5. ADLER, L. H. *Impaction of Feces.*
6. PEDERSON, V. C. *Instructions to Those Having Syphilis.*
7. JACKSON, A. H. *The Determination of Sex: Is it Subject to the Law of the Survival of the Fittest?*

4. Von Ruck summarized the results of sixteen years' treatment of tuberculosis with tuberculin. He has for many years observed no bad effects from the treatment, but rather great benefit. The products of the tubercle bacillus act in a truly specific way by inducing antibacterial or anti-toxic immunity. The limitations of the treament arise from degeneration of tubercular tissues and associated exudative and productive inflammations. The specific treatment will arrest the action of the bacilli and prevent further degenerative changes, but it will not restore advanced changes or remove necrotic tissue or inflammatory products. It cannot remove the bacterial bodies from caseous tissue, or prevent softening and exfoliation. The author tabulates his cases, of which he has treated 1,893 in the past sixteen years, and compares them with a series of cases treated by private physicians. As to the permanency of his results, in the first stage 91.4% have not relapsed. Of the second stage cases, 80.4% have had lasting results. Of the third stage cases, 37.4% are still living in good health.

NEW YORK MEDICAL JOURNAL.
SEPT. 7, 1907.

1. CLARK, L. P. *Remarks on the Medico-legal Aspects of Imbecility.*
2. ATWOOD, C. E. *The School Training of Backwood Children in the New York City Public Schools.*
3. KNOTT, J. *"Normal" Ovariotomy, "Female" Circumcision, Clitoridectomy, and Infibulation.*
4. SCHEPPEGRELL, W. *The Prevention of Deafness.*
5. HALLOCK, F. K. *The Neurasthenic Neuralgias.*
6. ELMER, W. G. *The First Five Years of the Graduate.*
7. BIERHOFF, F. *Police Methods for Sanitary Control of Prostitution.* (Concluded.)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
SEPT. 7, 1907.

1. JACOBI, A. *Smoke in Relation to Health.*
2. FARRAND, L. *Educational Methods in the Campaign against Tuberculosis.*
3. OTIS, E. O. *Public Provision for Advanced Cases of Tuberculosis.*
4. *HALSTEAD, A. E. *Glycosuria in Surgical Relations.*
5. BABLER, E. A. *The Treatment of Traumatic Rupture of the Kidney.*
6. PUSEY, B. *Involvement of the Cornea and Bulbar Conjunctiva in the Secondary Stage of Syphilis.*
7. HEIDINGSFELD, M. L. *Lupus Erythematosus.*
8. LENNANDER, K. G. *Abdominal Pain. Especially Pain in Connection with Ileus.*
9. *CANNON, W. B., AND MURPHY, F. T. *Physiologic Observations on Experimentally Produced Ileus.*
10. ROBERTS, J. B. *The Symptoms and Diagnosis of Strangulation of the Intestine.*
11. *PRATT, J. H., PEABODY, F. W., AND LONG, A. D. *The Occurrence of Typhoid Bacilli in the Stools of Typhoid Patients.*
12. WEIR-MITCHELL, S. *The Literary Side of a Physician's Life. Ronald Ross as a Poet.*
13. PITZMAN, M. *A Simple Proof of the Cessation of Respiration.*

4. Halstead found a transitory glycosuria in 6 out of 44 simple fractures. The amount of sugar was never over 1% and did not seem to affect union. In six cases of fracture of the vertebræ he found glycosuria in three. A transitory glycosuria is not uncommon after infections with the ordinary pus micro-organisms, as carbuncle and erysipelas, especially when associated with gangrene. This glycosuria clears up under proper drainage, etc. Major operations with general anesthesia are contra-indicated while there is sugar in the urine. He advises a restricted diet. The prognosis is not affected by the glycosuria. In operations on diabetics, coma is the great danger. This is much more frequent after general anesthesia, so local anesthesia is always to be preferred. Spinal cocainization he prefers for leg amputations for diabetic gangrene. If possible a thorough course of medical treatment is desirable before an operation. The presence of acetone and the ammonia compounds is of more importance than the amount of

sugar. One case is on record of a fatal coma coming on after operation, in a patient who had been sugar free for two years.

9. Cannon and Murphy take up experimentally dynamic ileus, *i. e.*, ileus with the syndrome of occlusion of the bowel, without, however, closure of the lumen, as opposed to mechanical ileus, in which there is an actual occlusion of the bowel. The method employed was to observe the passage of food mixed with bismuth along the intestine by means of the x-ray. The animals used were cats. They crushed testicles or ovaries in their animals and found marked retardation of discharge of food from the stomach and sluggish movement of food through the small intestine. However, if the splanchnic nerves are cut, and then the testicles crushed, peristalsis is normal. Hence they conclude that ileus paralyticus can be produced without changes in or about the intestinal wall and that the condition is one of inhibition conveyed by the splanchnic nerves. They manipulated the stomach and intestines of animals and found a similar sluggishness. Cutting the splanchnic nerves before manipulation had no effect. Hence they assume that ileus paralyticus is not necessarily the consequence of reflex inhibition, but can be entirely explained as due to disturbances of the local mechanisms in the wall of the gut. They found that aloes mixed with the food produced no change in the ileus due to local manipulation. Physostigmine seemed to cause a very marked but only temporary increase of peristalsis in animals whose intestines were paralyzed by reflex inhibition, *i. e.*, whose testicles were crushed.

11. Contradictory to the usual belief that the intestinal contents in typhoid fever are swarming with typhoid bacilli, Pratt, Peabody and Long, using improved methods, were able to isolate typhoid bacilli from the stools in only 17 out of 100 cases of undoubted typhoid fever, or 17%. [R. I. L.]

THE LANCET.

SEPT. 14, 1907.

1. TREVELYAN, E. F. *The Co-ordination of Post-Mortem Work with Clinical Observation.*
2. FOXWELL. *An Address on Inhalation.*
3. *IWAI, T. *A Statistical Study on the Polymastia of the Japanese.*
4. LEDIARD, H. A. *Spontaneous Aneurysm of the Popliteal Artery Treated by Extirpation.*
5. *SHORT, A. R. *Actinomycosis of the Appendix.*
6. WILSON, T. S., AND MILLER, J. *Two Cases of Acute Tuberculous Cerebrospinal Meningitis.*
7. BONSFIELD, L. *Observations from the Soudan.*
8. PETERS, O. H. *Irregularity of the Pulse in Diphtheria.*
9. SPENCER, W. G. *Results in Appendicitis treated by the Immediate and Complete Operation.*

3. Iwai has made a careful and complete statistical study of polymastia among the Japanese. He gives an exhaustive bibliography, and concludes that among the Japanese, unlike western people, polymastia is generally found above the normal breasts, and most commonly on the anterior wall of the axilla; in many cases, especially in males, the areolæ are pigmented. The frequency of polymastia is about 1.68% in males and 5.19% in females. It occurs on the left more than on the right. It is inherited and in most cases transmitted by mothers. In perfect specimens the secretory process begins at the time of parturition and sometimes continues for six months. Six is the largest number of glands yet found on one person.

5. Short reports in detail 5 cases of actinomycosis of the appendix. About one hundred and fifty cases up to date have been reported. As regards etiology, a farming life, or one having to do with corn, seems to play a part. There may be extensive ulceration of the mucous membrane with or without thickening and usually ending in perforation. Before perforation has occurred diagnosis can only be made by finding granules in the stools. If in a patient over fourteen years of age there is a history resembling appendicitis, and a large, very hard mass adherent to the deep structures, with only slight fever and pain, and little or no vomiting, actinomycosis should be strongly suspected. If in addition the skin is thickened, edematous, shiny and of a purple tint, the probabilities are very great. Abscess and sinus formations are very characteristic. The prognosis is very grave. Operation should be as complete as possible. [J. B. H.]

BRITISH MEDICAL JOURNAL.

SEPT. 7, 1907.

EDUCATIONAL NUMBER.

1. *The Profession of Medicine.*
2. *The Portals of the Profession.*
3. *Regulations of the General Medicine Council.*

SEPT. 14, 1907.

1. SIMON, R. N. *The Empirical and Experimental Methods in Medicine.*
2. *BOYCE, R. *The Treatment of Sleeping Sickness and Other Trypanosomiases by the Atoxyl and Mercury Method.*
3. ALDRED, W. A. *Two Cases of Poisoning by Weed-Killer.*
4. BROWN, W. L. *A Case of Myelopathic Albumosuria.*
5. THOMSON, H. W. *The Eye-Sight of the Poorer City Children.*
6. BEAUMONT, W. M. *Synergic Movements of the Eyelids and Mouth.*
7. LEDUC, S. *Ionic Medication.*
8. DAVIDSON, J. M., SHENTON, W. H., RIDDELL, J. R., AND BRUCE, W. I. *Papers Dealing with the X-Ray in Diagnosis.*
9. SEQUEIRA, J. H., PIRIE, A. H., TOMKINSON, J. G., TAYLOR, J., AND HARRIS, J. D. *Papers Dealing with the Use of the X-Ray in Treatment.*
10. *SALOMONSON, K. A. W., JONES, H. L., MORTON, E. R., HUMPHRIES, F. H., AND SOMERVILLE, W. F. *Papers Dealing with Electro-Therapeutics and the Action of Electric Currents.*
11. *REID, A. D. *The Use of the Cryptoscope in Operations for Renal Calculi.*
12. WALSHAM, H., AND DALLY, J. F. H. *The Orthodiagraph.*
13. PEARSON, E. *The Use of the X-Ray, from the Point of View of the General Practitioner.*
14. NEWSHOLME, A. *A Discussion on the Co-ordination of the Public Medical Services.*
15. GILCHRIST, A. W. *On the Necessity of Increasing the Degree of Immunity against Smallpox.*
16. HORDER, T. G. *The New Vaccination Order.*
17. KENWOOD, H., AND ROUTLEY, E. W. *A Discussion on Infant Mortality and the Milk Supply.*
18. STARKEY, T. A. *The Economical Purification of Sewage in Rural Districts.*
19. MCWALTER, J. C. *The Prevention of Post-Mortem Putrefaction.*

2. Boyce reviews the work leading up to the use of atoxyl and mercury in treating sleeping sickness. Inorganic arsenic produced no permanent cures, the patient dying either of the protozoan infection or of too much arsenic. Atoxyl alone, while a tremendous improvement, was not satisfactory in many instances. Atoxyl combined with mercury, however, destroys both forms which occur in the life cycle of the trypanosome.

10. Somerville believes that high-frequency currents have a very considerable effect on the urinary system. He gives the details of several cases where the total twenty-four-hour amount of urine has increased under this treatment. He thinks that such currents improve the metabolism, and that the good results obtained from their use are not merely due to mental effect.

11. The cryptoscope is an ingenious apparatus by which a kidney exposed at operation can be thoroughly searched by means of the x-ray, and the smallest fragment of a stone discovered. This can then be removed by a small incision, instead of the large exploratory incision of the past. [J. B. H.]

THE PRACTITIONER.

AUGUST, 1907.

1. COPEMAN, S. M. *Some Recent Research Work on Cancer.*
2. CHEATLE, G. L. *The Spread of Cancer in the Upper Lip, and Its Influence on Treatment.*

3. *GRÜNBAUM, O. *The Diagnosis of Addison's Disease.*
4. SMITH, G. B. *Backward Displacements of the Uterus.*
5. *MOORHEAD, T. G. *Movable Spleen.*
6. ORMOND, A. W. *Notes on Two Cases of Leprosy Affecting the Eyes.*
7. LUND, K. F. *An Inquiry into the Cause of Sea-Sickness.*
8. RIGBY, H. M. *A Review of Recent Literature on Hernia.*
9. UPCOTT, H. *A Review of Recent Work in Abdominal Surgery.*
10. STEVENS, B. C. *The Treatment of Ulcers.*
11. TURNER, J. G. *Review of Dental Surgery.*

3. Grünbaum goes over the leading signs and symptoms of Addison's disease, and urges an earlier diagnosis. The pigmentation must be differentiated from that of (1) pregnancy, (2) chronic tuberculosis, (3) Vagabond's disease, (4) Von Recklinghausen's disease, (5) hemochromatosis, (6) exophthalmic goiter, (7) arsenic, (8) argyria, (9) the effects of heat, and (10) of workers in certain chemicals. The asthenia is very typical, and with an ergograph is easily demonstrated; blood pressure is invariably low; the blood itself shows few changes, but by means of the opsonic index some additional information may be gained.

5. Movable spleens are rare. The conditions leading to this anomaly are, in general, (1) enlargement, (2) relaxation of the splenic ligaments due to congenital or acquired defects, (3) trauma. It is more common in women who have a relaxed abodminal wall. Moorhead reports a case in which the diagnosis was only made at operation. Twisting of the pedicle may cause great variations in the size of the tumor. Opinions are about equally divided as to methods of treatment between splenectomy and splenopexy. [J. B. H.]

SEPTEMBER, 1907.

1. *BARKER, A. E. *Notes on Removal of Thyroid Tumors.*
2. CARR, W. J. *The Diagnosis of Chronic Valvular Disease of the Heart.*
3. RAWLING, L. B. *On Displacement of the Internal Semilunar Cartilage of the Knee-joint.*
4. *CLOGG, H. S. *Some Remarks on Inguinal Hernia in Children: Based on an Experience of 126 Cases Submitted to Operation.*
5. BLUMFELD, J. *Some Recent Contributions to the Study of Anesthetics.*
6. BARTON, G. A. H. *The C. E. — Ethyl Chloride — Chloroform Sequence.*
7. TURTLE, G. DE B. *Extra-uterine Gestation.*
8. NASH, J. T. C. *Disinfection and Disinfectants.*
9. GOMPERTZ, R. H. C. *Case of "Hour-Glass Stomach."*

1. Barker advises the use of light local anesthesia in removing thyroid tumors. He uses β-Eucaine, .2%, to which is added some adrenalin chloride. The injection should be into the skin, not under it. It is a mistake to operate before at least a half hour has elapsed after the last injection. Morphia before operation is of value. He gives the details of his operation, with plates, and reports 22 cases.

4. Clogg believes that the hernial sac in children is congenital in every case and never acquired. It is difficult to believe that cure can be obtained in any other way than by removing the sac. Trusses and other appliances do not cure. The earlier operation is done the better. This should be, in breast-fed babies, immediately after weaning, and in bottle-fed, if healthy, at two months. His operation differs in no way from that done on adults. Cases of hernia of cecum and appendix, hernia of the bladder, hydrocele in relation to hernia, inguinal hernia in the female child, tuberculosis of the sac and strangulation are also reported. [J. B. H.]

THE EDINBURGH MEDICAL JOURNAL.

AUGUST, 1907.

1. LENNANDER, K. G. *Abdominal Pain; Especially Pain in Connection with "Ileus."*
2. LITTLEJOHN, H., AND DRINKWATER, T. W. *Three Cases of Fatal Strychnine Poisoning.*
3. *BEADLES, C. F. *A Case of Aneurysmal Disease.*
4. NILES, A. *A Case of Rupture of Herniated Bowel by Sudden Contraction of Abdominal Muscles.*
5. COUPLAND, W. H. *Thomas Sydenham, the English Hippocrates.*

3. Beadles gives detailed clinical and post-mortem observations on a case bearing multiple, small, aneurysmal dilatations of the larger arteries at the base of the brain. Syphilitic endarteritis, syphilitic deposits and softenings in both cerebral hemispheres and symmetrical aneurysms at the bifurcation of both common carotid arteries were also found. The clinical symptoms were those of general paralysis. He reports other published cases of this condition, and reviews the opinions of other writers on the subject. [J. B. H.]

SEPTEMBER, 1907.

1. *DUCKWORTH, D. *The Alcohol Question and Temperance.*
2. THOMSON, A. *A Résumé of Kocher's Work in Abdominal Surgery.*
3. KYNOCH, J. A. C. *A Series of Five Cases of Cæsarian Section for Contracted Pelvis.*
4. *POYNTON, F. J. *Observations upon Arthritis in Young Children.*
5. GIBSON, G. A. *Death and Sleep.*
6. LITTLEJOHN, H. *A Case of Fatal Poisoning with Bichromate of Potassium.*
7. TURNER, A. L. *A Case of Lupus of the Larynx Successfully Treated by the External Application of the X-Ray.*

1. Duckworth believes that so-called temperance parties and workers are misnamed; that they are not striving for a temperate, moderate use of alcoholic beverages, but for a total abstinence. The moderate drinker has, until recently, been held in disrepute by extremists of both kinds. While, undoubtedly, there is a class of people who are totally unfit to use alcohol in any form, there is left a vast majority in which a moderate use of alcohol does no harm. He thinks that it is by a broad education along commonsense lines that the most good can be done.

4. Poynton describes the various forms of arthritis in early life. Gonococcal arthritis, though rare, sometimes occurs in marasmic children from a gonorrheal ophthalmia. It is much more serious than in adults. Septic arthritis may occur as in adults. Meningococcal arthritis is not rare during epidemics of cerebrospinal meningitis. There is also a rare form of acute tubercular arthritis. He also briefly describes Still's disease, and the arthritides associated with syphilis and hemophilia.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 31.

AUG. 1, 1907.

1. SOMMER. *Diagnosis and Therapy of Psychic and Nervous Diseases.*
2. *MONCKEBERG, J. G. *Arteriosclerosis of the Lung Arteries.*
3. KROEMER, P. *Clinical Observations on the Etiology and Therapy of Epithelioma of the Chorion.* (Continued article.)
4. *LEUTERT. *Bier Treatment in Otology.*
5. *HIRSCHFELD, H., AND KOTHE, R. *Abnormally High Leucocytosis in Severe Infectious Diseases.*
6. MÜHSAM, R. *Fatal Bleeding from a Duodenal Ulcer after an Appendix Operation.*
7. FRANKE, F. *Diagnosis and Treatment of Chronic Joint Diseases.* (Continued article.)
8. SOMMER AND DANNEMANN. *History of the Medical Faculty of the University of Giessen.*

2. A moderate grade of sclerosis in the smaller arteries of the lung not infrequently occurs in mitral stenosis and pulmonary tuberculosis, but causes practically no symptoms. Primary sclerosis of severe grade in the smaller pulmonary arteries is extremely rare. Only two such cases have been reported: one by Romberg, the other by Aust. The authors report two cases, with pathological examinations; the first being an extensive and severe sclerosis, affecting the arteries of the pulmonary circulation only, with narrowing of their lumen and consequent increase of blood pressure, and hypertrophy and dilatation of right side

of the heart, causing dyspnea, great cyanosis, pulsation in veins and liver, edema, and finally death. The second case was a thrombus formation with partial organization on the site of sclerotic changes in the pulmonary artery. Both these cases, as well as the two previously reported, occurred in young individuals, the oldest being thirty-three years. It is probable that the degenerative changes in these cases were brought about by some congenital defect in the arterial walls of the pulmonary circulation, as there was no evidence of sclerosis elsewhere.

4. Leutert concludes that the congestion treatment is useless in chronic middle ear diseases. In acute suppurations after scarlet fever and measles it may be of benefit when employed after operation.

5. Hirschfeld and Kothe report nine cases of severe infections, mostly appendicitis or peritonitis, in which the leucocyte count rose to between 60,000 and 92,000. Of these six died. Eight were of the female sex. Myelocytes were present to about 7% in all the cases. The morphological condition of the blood and blood-forming organs in cases of abnormally high leucocytosis in severe infectious diseases needs much further study. The authors think these high counts are much more common than is usually supposed. [L. G. M.]

No. 32. AUG. 8, 1907.

1. HEINE, B. *Suppurating Diseases of the Labyrinth.*
2. *HALBERSTAEDTER AND PROWAZEK. *Etiology of Trachoma.*
3. *WASSERMANN, M., AND MEIER, G. *Clinical Worth of the Serum Diagnosis in Syphilis.*
4. *NAGELSCHMIDT, F. *Indications for Treatment with the High-Frequency Current.*
5. FRANKE, F. *Diagnosis and Treatment of Chronic Joint Diseases.* (Concluded.)
6. KROEMER, P. *Clinical Observations on the Etiology and Treatment of Epithelioma of the Chorion.* (Concluded.)
7. SCHINDLER, C. *An Improvement of the Neisser Suspensory.*

2. Halberstaedter and Prowazek describe further the cell inclusions which they have seen in cells taken from the conjunctiva of cases of trachoma. These inclusions the authors believe to be micro-organisms, because they have a distinct, characteristic and constant appearance. They have been able to produce the disease experimentally in orang-outangs. In the case of other animals, such as guinea pigs, rabbits, and other apes, the experiments were negative.

3. The authors review what has been accomplished with the hemolytic blood test for syphilis, and give their experience in 39 cases, of which 27 were positive and 12 negative. Much further experience is necessary to determine its clinical value, but they believe the test may lead to a better comprehension of the pathogenesis of tabes and paralysis, although negative findings are not conclusive evidence against the presence of syphilis.

4. Nagelschmidt thinks the high frequency currents of great value in local conditions, such as warts and epitheliomata, which can often be cured by a single application of a prolonged shower of sparks. Local applications are also made for psoriasis, eczema, neuralgia, neuritis, sciatica, sprains, inflammations, colitis, etc. Constitutional conditions, as rheumatism, gout, diabetes and arteriosclerosis are among those which have yielded in a marvelous manner to this treatment in the authors' practice. [L. G. M.]

No. 33. AUG. 15, 1907.

1. WEBER, L. W. *Progress in Diagnosis of Nervous Diseases.* (Continued article.)
2. KRAUSE, P. *Bilateral Nephrolithiasis.*
3. DOEBBELIN. *Sequestrated Abscess of the Spleen.*
4. KROEMER, P. *Etiology and Treatment of Epithelioma of the Chorion.* (Concluded.)
5. *OGATA, M., AND ISHIWARA, K. *Tsutsugamushi Disease.*
6. MULLER, G. J. *Status of Actinotherapy.* (Continued article.)
7. *LISSAUER, A. *Tuberculin Suppositories.*

5. Ogata and Ishiwara, in a communication from the hygienic institute of Tokio, give the results of their investigations of Tsutsugamushi disease. This affection is also known as the inundation fever of Baelz. The authors isolated a protozoan organism from the ulcers which are so frequently met with in this disease, which they describe fully. The organism has been cultivated, and the disease transmitted to animals by inoculation.

7. Since early in 1906, Lissauer has made use of tuberculin suppositories, in the treatment of 40 cases of tuberculosis at all stages of the disease. The prognosis for a cure was unfavorable in most of the cases. The tuberculin was placed inside of hollow suppositories, in doses varying from 0.5 mg. to 25 cg. These were given sometimes daily, and sometimes at intervals of one or more days. The results obtained were equal to those following the use of tuberculin by mouth. No local reaction was caused by the suppositories, except occasionally a little itching which was easily controlled. The author administered tuberculin by mouth in gelatin capsules in two cases of advanced phthisis, but could see no beneficial result. [L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 30. JULY 23, 1907.

1. MENGE. *The Indications for Pubiotomy in Obstetrical Practice.*
2. *PLAUT, F. *The Present Position of Serum Diagnosis in Syphilitic Conditions of the Central Nervous System.*
3. FORNET. *Serum Diagnosis in Lues, Tabes and General Paresis.*
4. *LÖHLEIN, M. *Wright's "Opsonin Theory," and its Influence on the Therapeutics of Infectious Disorders.*
5. *PANKOW. *Why the Appendix Should be Removed in Gynecologic Operations.*
6. GEIGEL. *The Importance of the Auricle in Hearing.*
7. TINTEMAN. *The Relation between Certain Psychoses and Life Insurance.*
8. BERNDT, F. *Operations for Carcinoma of the Large Intestine.*
9. TRETZEL, L. *A Diagnostic Symptom in Appendicitis.*
10. ENGELS, W. *The Clinical Importance of Bachner's Albumin Qualitative Method.*
11. BEWERSDOFF. *A Case of Puerperal Septicæmia Treated with Streptococcus Serum.*
12. PFAUNDLER, M. *The Treatment of Congenital Lack of Resistance.* (Continued article.)
13. *KIEUBÖCK, R., SELIG, A., AND BECK, R. *Observations on Swimmers.* (Concluded.)

2. Plaut reviews the work of Wasserman, Neisser and Bruck on the presence of antibodies and precipitives in syphilitic and parasyphilitic blood sera. In a series of 44 patients with general paresis, the author found, in all but one, a positive reaction in the spinal fluid. In the one case, the blood serum gave a positive reaction, though the spinal fluid was negative. In two cases, the first examination of the fluid was negative, but a later one showed a positive result. The intensity of the reaction bore no relation to the intensity of the process. The same condition of the spinal fluid is to be found in tabetics. Plaut has examined a number of cases of meningeal and cerebral syphilis, without finding this reaction present. Though the number of these latter cases are too few to base rules upon, it seems undoubted that a specific serum reaction is constant in general paresis and in tabes.

4. Löhlein sums up Wright's opsonin theory, and the interesting therapeutic results which have been gained in vaccine therapy. He doubts if Wright's theory is quite correct, and as far as he has been able to judge, thinks the opsonin is the same as the normal amboceptor of the German theory. This, however, must be looked into further before proved.

5. Pankow reviews the pathology, both macroscopic and miscroscopic, and points out that a large number of macroscopically normal appearing appendices show microscopically marked pathologic changes. He claims that appendicitis is far commoner than supposed, and says that 60% of all women coming to gynecologic operations in his clinic have had appendicitis. In many cases of chronic salpingitis, the author believes the appendix to be the etiological

factor, especially in cases of sterility due to adhesions. In these latter cases merely freeing the adhesions has led the way to a successful pregnancy. When tuberculosis and gonorrhea can be definitely ruled out, appendicitis is the probable cause of such conditions, for it is possible for a very severe inflammation of the appendix to pass almost unnoted. Many cases of so-called neuralgia of the ovaries are due to old adhesions from appendicitis. With all these points in mind the author strongly recommends the removal of the appendix in all gynecologic operations requiring laparotomy.

13. The authors carried out a series of observations by means of the orthodiagraph before and after excessive exertion in swimming contests, requiring a maximum exertion for a short period. In 10 out of 11 contestants examined they were able to demonstrate an actual diminution in the heart area after the contest instead of a dilatation. This they consider an "acute diminution." Accompanying this there were rapid, small pulse, dyspnea and cyanosis, as would be expected after such exertion. The contestants were for the most part in excellent physical condition. The authors consider this condition to be due to a dilatation of the peripheral vessels of the muscles under the influence of the exertion, a smaller amount of blood than normal coming to the heart at each diastole. In 7 out of the 11 cases albumin appeared in the urine. In 2 sugar was present. They conclude from the above data that swimming is one of the severest exercises, and that most careful training should precede the contest.

[R. D.]

Berliner Klinische Wochenschrift. No. 28. July 15, 1907.

1. *Oppenheim, H., and Borchardt, M. *Two cases of Tumor of the Cerebellum; Operation; Recovery.*
2. Babes, V., and Vasiliu. *The Treatment of Pellagra by Atoxyl.*
3. Walliczek, K. *Hyperostosis of the Upper Jaw.*
4. Grosse, O. *Improvised Asepsis.*
5. Blumreich, L. *Gangrene of the Cervix in Abortion and its Significance.*
6. *Helbron. *Tuberculosis of the Eye and Its Treatment.*

1. (I) Oppenheim reports two cases of cerebellar tumor with operation, the first in a man of twenty-six years, in previous good health. There were present headache, especially in the occipital region, vertigo, vomiting, deafness of the right ear, cerebellar ataxia, slight nystagmus, shrinking of the field of vision on the right, absent corneal reflex, slight changes of sensation over the right side of the face, paresis of the facial nerve on the right, and slight ataxia of the right arm. A diagnosis was made of tumor in the posterior fossa of the skull, probably of the cerebellum, and a radical operation was performed. The tumor was a fibroma. Two days after operation, all the symptoms had improved, but the ataxia of the arm had increased. The patient was seen about five months later, and was without symptoms. The second case showed the following: total blindness, total left facial paralysis with reaction of degeneration, left auditory nerve affected, slight paresis of the pharynx on the left side, slight nystagmus, and limitations of movement of the left eye. Here a diagnosis of the tumor in the posterior fossa, involving the roots of the facial and auditory nerves, was made. This was also proved by operation. The tumor was removed with a small piece of the cerebellum. Three weeks later severe bulbar symptoms arose, which necessitated feeding through a stomach tube. Also marked tremor and ataxia of the left side appeared. The bulbar symptoms slowly disappeared, but the blindness and facial paralysis did not recede. The cerebellar symptoms still remained. In this case, the process was too far advanced to hope for complete recovery, but life was saved.

(II) Borchardt describes his technique in the above operations. Six such operations have been performed by him, and three patients are still alive. He finds that removal of small pieces of the cerebellar tissue, though followed by temporary increase of symptoms, are of no moment in the long run.

6. Helbron describes minutely all the forms of tuberculosis of the eye. He points out that in many cases the diagnosis cannot be made from the clinical appearances. He recommends removal of suspicious glands in the preauricular or submaxillary region, and animal inoculation, or the tuberculin test. The treatment should be local as well as general. When possible all tuberculous tissue should be removed. Tuberculin T. R. has been tried with little success. The new antituberculosis remedy, tulase, has been tried of late, but sufficient time has not elapsed since its introduction to permit a judgment as to its efficacy.

[R. D.]

Miscellany.

THE MARY PUTNAM JACOBI FELLOWSHIP.

The Women's Medical Association of New York City desires to pay a permanent tribute to Dr. Mary Putnam Jacobi. In selecting a form of memorial the association felt it should be something that furthered the present urgent needs of women in medicine, thus perpetuating the spirit of Dr. Mary Putnam Jacobi's career. To this end it has been decided to establish a fellowship in her name to give greater opportunity to women for graduate study in medicine.

The sum of $8,000 has already been raised by prominent persons throughout the country interested in the establishment of this fellowship. Mrs. Russell Sage was the donor of $1,000, and other contributions have ranged from $500 to $2.

Dr. Putnam Jacobi won an international recognition and reputation as a woman physician in Paris, and opened the Ecole de Médecine to women. She was the first woman admitted to the New York Academy of Medicine, and her remarkable hospital work and medical writings placed her at once with the leading medical lights in the nineteenth century. An early member of the League for Political Education of Woman, the Equal Suffrage Association, and the Consumer's League, she accomplished a noble work for women.

The Fellowship Fund must amount to at least $25,000 in order to provide an annual income of $1,000, and render efficient aid to post-graduate women students in medicine. The Women's Medical Association of New York City (Treasurer, Eleanor Tomes, M.D., 136 East 30th Street) invites the hearty and generous co-operation of all who desire to further the higher education of medical women of the United States. Among those interested in this Memorial, whose names are on the list of honorary members of the committee, are: Prof. Felix Adler, Mr. Jacob A. Riis, William Osler, M.D., Pres. Nicholas Murray Butler, Hon. Seth Low, Pres. Benjamin Ide Wheeler, Mrs. Henry Villard, Pres. M. Cary Thomas, Mr. Richard Watson Gilder, Dean Laura Drake Gill, Rev. Percy Stickney Grant, Pres. J. Y. Schurman, Miss Grace H. Dodge, Charles L. Dana, M.D., Howard A. Kelly, M.D., Mrs. Ellen H. Richards, Emily Blackwell, M.D., Francis P. Kinnicutt, M.D., Mrs. Frederick Nathan. Members of the working committee are: Chairman, Annie S. Daniel, M.D., 321 East 15th Street, New York City; Treas., Eleanor Tomes, M.D., 136 East 30th Street, New York. Auditors, Gordon Macdonald, Josephine Ettlinger, LL.M.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPT. 21, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,374	538	Quincy	9	5
Chicago	—	—	Waltham	11	3
Philadelphia	—	—	Pittsfield	8	2
St. Louis	—	—	Gloucester	5	2
Baltimore	202	66	Brookline	6	2
Cleveland	—	—	North Adams	8	0
Buffalo	—	—	Chicopee	8	7
Pittsburg	—	—	Northampton	7	2
Cincinnati	—	—	Medford	4	1
Milwaukee	—	—	Beverly	4	—
Washington	—	—	Leominster	3	—
Providence	74	22	Hyde Park	6	2
Boston	217	76	Melrose	—	—
Worcester	60	22	Newburyport	—	—
Fall River	—	—	Woburn	4	3
Cambridge	25	11	Marlboro	8	4
Lowell	44	17	Westfield	2	—
Lynn	29	11	Peabody	—	—
New Bedford	35	16	Revere	2	1
Springfield	16	6	Attleboro	—	—
Lawrence	32	11	Clinton	4	1
Somerville	15	3	Adams	3	3
Holyoke	22	15	Gardner	—	—
Brockton	13	8	Milford	—	—
Malden	10	3	Watertown	6	4
Chelsea	10	3	Plymouth	—	—
Salem	18	6	Weymouth	6	2
Newton	17	5	Framingham	7	3
Haverhill	10	1	Southbridge	9	7
Fitchburg	—	—	Wakefield	—	—
Everett	9	2	Webster	—	—
Taunton	14	6			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING SEPT. 28, 1907.

E. C. TAYLOR, passed assistant surgeon. Ordered to the Naval Hospital, N. Y.

F. W. S. DEAN, passed assistant surgeon. Detached from the Navy Yard, New York, N. Y., and ordered to the "Alabama."

W. A. ANGWIN, assistant surgeon. Detached from the "Scorpion," and ordered to the Naval Hospital, Norfolk, Va.

J. G. FIELD, surgeon. Detached from duty with Marine Rendezvous, Houston, Texas, ordered home, and granted leave for 6 weeks.

H. W. COLE, assistant surgeon. Detached from the "Alabama," and ordered to the Naval Training Station, Newport, R. I.

H. A. MAY, assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va.

The following officers detached from duty at the places indicated after their respective names, and ordered to instruction at the Naval Medical School, Washington, D. C.: Assistant Surgeons, H. A. GARRISON, Naval Hospital, Newport, R. I., R. HAYDEN, Naval Hospital, Annapolis, Md., S. L. HIGGINS, Naval Hospital, Norfolk, Va., F. W. SMITH, Naval Hospital, New York, N. Y., O. V. HUFFMAN, Naval Hospital, Norfolk, Va., G. TRIMBLE, Naval Hospital, Norfolk, Va., H. R. HERMESCH, Naval Hospital, New York, N. Y., Acting Assistant Surgeons, F. W. MCGUIRE, F. W. P. HOUGH, Naval Hospital, Boston, Mass., and K. C. MELHORN, Naval Hospital, Norfolk, Va., Assistant Surgeons, E. V. VALZ and J. C. CLAYTON, ordered to the Naval Medical School, Washington, D. C.

Surgeon J. S. TAYLOR, commissioned surgeon from Oct. 7, 1906.

Surgeon K. OHNESORG, commissioned surgeon from June 16, 1907.

Passed Assistant Surgeon B. H. DORSEY, commissioned passed assistant surgeon from March 2, 1907.

Passed Assistant Surgeon, C. T. GRAYSON, N. T. MCLEAN, commissioned passed assistant surgeons from June 28, 1907.

Assistant surgeons C. W. O. BUNKER, H. F. LAWRENCE, C. J. HOLEMAN, G. D. HALE, A. B. HAWARD, appointed assistant surgeons from Sept. 21, 1907.

SOCIETY NOTICES.

CENTRE DISTRICT AND MERRIMACK COUNTY MEDICAL SOCIETY.—The Quarterly Meeting, being the one hundredth anniversary of the society, will be held Tuesday, Oct. 8, 1907, in the Senate Chamber, State House, Concord, N. H.

NEW YORK AND NEW ENGLAND ASSOCIATION OF RAILWAY SURGEONS.—The seventeenth annual meeting of the association will be held at the Academy of Medicine, New York City, Nov. 14, 15, 1907, under presidency of Dr. T. H. Dana, of Cortland, N. Y.

Dr. Robt. Dawbarn will deliver the "Address on Surgery" on Nov. 14, and on the following day will give a clinic demonstrating his method of sequestration.

EIGHTH ANNUAL MEETING OF THE NATIONAL ASSOCIATION FOR THE STUDY OF EPILEPSY.—The eighth annual meeting of the National Association for the Study of Epilepsy will be held at the Jefferson Hotel, Richmond, Va., Oct. 24, 25, next. Addresses will be given at the first session by the Governor of Virginia, the Mayor of Richmond and the President of the Medical Association of the State of Virginia. Responses to these addresses will be made by Dr. Everett Flood, President of the association, and Dr. William P. Spratling, of the Craig Colony for Epileptics, Sonyea, N. Y. Reports from all states in this country which are now caring for epileptics will be made by the secretary.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.—The fall meeting will be held in Sprague Hall, Medical Library, Boston, on Wednesday, Oct. 2, 1907, at one o'clock.—Business: What action, if any, shall this society take in the matter of reform in medical expert testimony? Scientific Papers; a symposium on sudden death.—1. Sudden death in a synopsis of twenty years of medico-legal work, by Dr. Francis J. Canedy, of Shelburne Falls, president of the society. 2. Sudden death from cerebro-spinal lesions, by Dr. George P. Twitchell, of Greenfield. 3. A case of justifiable homicide, by Dr. Silas D. Presbrey, of Taunton. 4. A case of sudden death resulting from abortion, by Dr. Oliver H. Howe, of Cohasset, and Dr. William F. Whitney, of Boston. A large attendance is especially desired at this first meeting of the year.

OLIVER H. HOWE,
Recording Secretary.

RECENT DEATHS.

JOHN HOWARD THURLOW, M. D., M.M.S.S., died in Roxbury, Sept. 29, 1907, aged fifty-four years.

DR. PANTALEON CANDIDUS, long a practitioner in the Williamsburg District of Brooklyn, N. Y., died on Sept. 25, in the seventy-sixth year of his age. He was born in Germany and was graduated from the College of Physicians and Surgeons, New York, in 1872. Dr. Candidus was prominent in Masonic circles.

VIVIAN DANIEL, M.D., M.M.S.S., of Watertown, died Sept. 24, 1907, aged forty-one years. Dr. Daniel was born in Cornwall, England, Nov. 26, 1865. His parents went to Canada while he was still an infant, and later moved to East Boston, where he attended school. He was graduated from the Harvard Medical School and from the Boston City Hospital, beginning practice in Watertown in 1897, where he built up a large practice. He had been a member of the Waltham Hospital Staff since 1898, town physician and a member and chairman of the Watertown Board of Health. Dr. Daniel was married in 1904 and his wife survives him. He died at the Waltham Hospital after an illness of two weeks of appendicitis.

DR. PETER M. WISE, of New York, who had been a sufferer from locomotor ataxia for several years, died in the J. Hood Wright Memorial Hospital on Sept. 22, from an overdose of a prescription, said to be composed of morphine, hydrated chloral and sodium bromide, which he had been taking for the relief of pain. He was found in his bed room by his wife in an unconscious state, and removed to the hospital, where it was found impossible to revive him. Dr. Wise was fifty-six years of age and a native of Batavia, Genesee County, N. Y., and was graduated from the medical department of the University of Buffalo in 1872.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Surgeon-General of the Army to the Secretary of War. For the Fiscal Year ending June 30, 1907. Washington. 1907.

Heart Disease and Blood Pressure. A Practical Consideration of Theory and Treatment. By Louis Faugeres Bishop, A.M., M.D. Second edition. New York: E. B. Treat & Co. 1907.

What should be the Attitude of the Profession toward the Hygiene of School Life? By Richard Cole Newton, M.D. Reprint.

Zeitschrift für den deutschen Unterricht. Von Prof. Dr. Otto Lyon. Leipzig and Berlin: B. G. Teubner. 1907.

HOSPITAL JOURNAL OCT 14 1907 LIBRARY

Original Articles.

THE NEED OF POPULAR LECTURES ON INSANITY.*

BY HENRY R. STEDMAN, M.D., BROOKLINE, MASS.

A VERY limited experience, it is safe to say, is enough to satisfy any alienist that far less is known and that more mistaken notions prevail about insanity and the insane among people generally than is the case in any other department of medicine.

This surprising public ignorance is found among the unthinking and the educated alike, and together with other harmful results has long exposed physicians and their subordinates in hospitals for the insane to misrepresentation and reproach and the relatives and friends of the inmates of these institutions to constant uneasiness and sometimes the greatest anxiety through sensational and false reports regarding their treatment. It is also reasonable to believe that much of this might be averted or greatly modified by the dissemination of accurate information from authoritative sources regarding the disease and the methods employed in treating it, the safeguards against illegal commitment and abuse of patients in hospitals, as well as the comfortable housing, good general care and medical attendance they receive. To be sure, hospital reports might often tell the story if they ever reached the friends of the ordinary patient and were not too full of other matters to appeal to them.

For much of this ignorance there is abundant reason. By the very nature of their disease, the mass of insane patients must of necessity be cared for in hospitals at a distance from home for long periods, where their relatives can see them but seldom. Thus the opportunities for observing the patient and his disease close at hand that obtain in cases of physical disorders, and familiarizing themselves with his true condition and the difficulties of his proper management, aided by the information and advice of the physician, is in most cases, except, perhaps, for a few days, practically impossible. The same reason explains in a measure the unfamiliarity of the general practitioner with insanity and the fact that there is no branch of medicine in regard to which physicians who are not engaged in the practice of it are so ready to admit their ignorance, and no class of cases which they are more anxious to avoid.

The usual avenues of information about the disease thus closed against it, it is natural that the popular belief should be satisfied with the insanity of the newspaper, the periodical and the novel, that people should run after false prophets, and that secrecy and mystery should shroud the disease, begetting false and impossible ideas of its victims and keeping alive the prejudice regarding their treatment which still exists after so many years of progress in the amelioration of their lot.

But it is by no means in this direction alone that the popular ignorance and error regarding insanity manifests itself. There are few aspects of the disease, in fact, which do not call urgently for public enlightenment. How little is generally known of the signs of approaching insanity, for example, and how common an experience it is to see plain indications of the disease disregarded until an overt act, sometimes disastrous, even fatal, has occurred. Of the causes of insanity, also, the precise knowledge of which in individual cases often baffles the alienist himself, not enough is known by the laity to lead it in many cases to take ordinary precautions for its prevention. Mental hygiene also, the study of which is of vital importance to the individual and the race, is only just beginning to raise its head in the vast growth of investigation into and knowledge of the prophylaxis of disease that is becoming so widespread.

The idea of public lectures on insanity is not new. It had its germ in the broad humanitarian and economic measure of patronage or aid societies for the insane which have flourished for more than twenty years in England, France, Germany and Switzerland, a feature of whose work was combating the prejudices existing in regard to mental maladies. In these associations, it will be remembered, originated the system of the after care of the insane, which at last seems to have taken a foothold, and it is to be hoped a firm one in this country. Popular lectures on insanity found a strong advocate in Morel, of Belgium, who addressed our twenty-fifth National Conference of Charities and Correction on Guardian Societies for the Insane, and our appeal cannot be better fortified than by quoting his words in advocacy of this measure as one feature of the work of a guardian or patronage society. "In my opinion," he says, "much good could be done by giving popular addresses upon the predisposing and exciting causes of insanity and preventive treatment of the malady. When once these questions become understood by the public, mutual aid, moral as well as material, becomes possible. From that moment the insane will be considered as sufferers from disease. These popular addresses should instruct as to the patient's early treatment, giving short and clear descriptions showing how a mental trouble can be recognized. People still remain distrustful of hospitals for the insane. They do not believe as they should that many cures are possible and that they are more frequent and rapid if the patient be placed early under treatment. Guardian societies should in this way help to prepare people by information which shall combat these prejudices, and the public should be taught to take an interest in what actually goes on in asylums and how patients are treated there. These results can only be obtained by constant co-operation among persons of broad ideals who shall interest themselves in arranging public lectures in which shall be set forth the suffering engendered by mental disease, the hope that lies in early treatment and the conditions which may contribute to recovery and prevent a recurrence of the disease."

Most of us have long wished that these and

* Read at the meeting of the American Medico-Psychological Association at Washington, D. C., May, 1907.

other truths about insanity might be publicly and plainly brought home to people in this way, and now is the propitious moment for making the effort, when the tide is so strong in the direction of popularizing the knowledge of medicine in its other branches, a tendency originating in the tuberculosis crusade which has assumed such large dimensions and is accomplishing so much toward checking the spread of the disease. Two or three years ago the first step in the medical education of the public was taken by the British Medical Association, and the *British Medical Journal* reports that the popular lectures at its annual meetings have attracted large audiences, encouraging the hope that the plan may later be developed into a fully organized system.

Throughout the winter of 1906–7 a long and comprehensive series of popular lectures embracing a great variety of subjects in medicine and surgery has, for the first time in its history, been given at the Harvard Medical School by its professors and instructors every Saturday and Sunday with surprisingly successful results in point of attendance and general interest. The newspapers have given fairly accurate reports of the lectures and sensible editorial comments have been frequent. This shows that these are live matters with people in general. In this schedule of subjects, psychiatry had no place, but this omission will be remedied next winter when several popular lectures on mental disease will be given as a part of the regular course of popular medical lectures delivered at the Harvard Medical School; and the endeavor toward securing this desirable end in Boston has led us to urge at the same time by this appeal a general movement in the same direction in other parts of the country.

The credit of inaugurating the first series of public lectures on insanity is due to the Psychiatrical Society of New York City. Under its auspices Dr. Adolf Meyer lectured last winter on "Modern Psychiatry, its Possibilities and Opportunities"; Dr. August Hoch on the "Manageable Causes of Insanity"; Dr. C. L. Dana on the "Data of Heredity"; and Dr. Allan McLane Hamilton on the "Development of the Legal Regulations Concerning the Insane." These lectures were intended for the general physician and non-professional leaders of sociological interests as a basis for the organization of a movement toward prophylaxis and the development of sound interest in this eminently important topic. They were of an academic character and, on the whole, less likely to appeal to the general public than other subjects that might be selected, but were quite well attended and will probably be continued in the coming winter.

The ideal arrangement for a course of such lectures should be one, we think, which would attract all classes of hearers. One set, for example, like those just referred to for the more educated, and another, given perhaps in a central locality, which should deal with the more practical aspects of the disease. The auspices under which the popular lecture on insanity should be given are most important. A prominent medical school would seem to be the best indorsement, and if given, as at the Harvard school, as a part of a comprehensive schedule of popular lectures on disease in general, the association of the two would go far toward correcting the prevailing idea that insanity is something apart and not a disease to be classed with other maladies. Boards of insanity also would do well to encourage and institute public lectures, and medical societies of prominence and influence would be sponsors of weight with the community for such addresses. It is very necessary to prepare the ground for such an unusual departure in public instruction by advertising them freely in the press and by sending out a large number of circulars to persons interested in all kinds of eleemosynary work, social reform, schools, hospitals, courts and other institutions.

Appropriate subjects will occur to all. Among those which would seem more especially to appeal to the educated classes are, for example:

1. Hereditary Conditions Influencing Insanity: The intricacy and uncertainty of laws of disease-heredity. The ascertained average proportion of insane relatives to the number of sane persons in a community. The curability of attacks of insanity in patients with strong hereditary taint, etc.

2. Mental Hygiene, in its protean aspects.

3. The Criminal Aspects of Insanity: Crime a common symptom incident to the disease. Pleas of insanity and demonstration by statistics of the actual number of criminals (far smaller than commonly supposed) who escape punishment on that pretext. The many cases which never come into public notice of criminals for whom this plea is made that are found by experts to be *not* insane. The large number of convicts in the penal institutions of all countries who were insane when committed. Tests of responsibility and recommendations for new legislation which shall insure accurate and just expert decisions, etc.

For the public at large the following subjects occur to the writer, and it is in popular exposition of these questions that we probably shall come closer to the main object of such lectures and the real needs of the people in general as regards matters relating to insanity.

1. The True Nature of Insanity: Bad as it is, it is not necessarily so formidable a disease as it appears to be to the minds of people in general. Small proportion of violent "raving" patients. Large numbers of mild cases that never enter a hospital. Comparative frequency of recoveries, temporary and other, and long intervals of health. Short duration of many attacks. Similarity in this respect to general disease. Great advantage of the early treatment of pronounced cases away from home, etc.

2. The Reliable Signs of Approaching Insanity: Possibility of averting an attack. Precautions against dangerous acts. Methods of commitment, etc. The increasing number of voluntary patients in hospitals for the insane. Emergency, cases, etc. The frequency in sane people of minor and transient morbid mental states, fears, etc.,

and even hallucinations that are really unimportant and do not betoken insanity.

3. The Manageable Causes of Insanity.

4. Alcoholism and Insanity.

5. The Care and Treatment of an Insane Patient in a State Hospital from Admission to Discharge. Safeguards against illegal commitment. Supervision of hospitals by state boards of insanity. The large number of discharges (bearing on the popular belief that many are sent to insane asylums, but few come out). Diet of the patients. Systematic training of the nurses. Oversight of nurses and precautions against neglect, abuse and escape of patients. Medical attention to patients and study of the disease in hospitals. Harm done by the usual newspaper accounts of insane patients and hospital management. The contrast between care at home and hospital care. Condition of patients when brought to hospitals and best means of transportation of difficult cases, etc.

With such a list of subjects to draw from, it would seem easy to inaugurate a suitable course of lectures which could hardly fail, if under the right auspices, to enlighten and ease the public mind.

But the manner in which the subject shall be presented to the audience is quite as important as the subject itself. This has been effectively urged in editorials on the subject of popular medical lectures in the Boston Medical and Surgical Journal. A tendency has been noticeable in the lectures thus far given to paint in too somber colors and to make too much of the dangers of incurring this and that dread disease for lack of proper precaution, and for want of care in analyzing statistics, magnifying the prevalence or increase of the disorders. Now while the possibilities of harm should not be understated, neither should they be exaggerated to the extent of creating unnecessary and unhealthy alarm. The utmost care should be exercised to prevent misconceptions on the part of our hearers, theories should be discarded and only actual ascertained facts dealt with which have a definite, practical bearing. The difficulties are in one way far greater than in lecturing to a class of medical students and the temptation greater to speak with less accuracy to a popular audience. It goes without saying that what is said needs to be simply, clearly and graphically put. For the popular medical lecture to be most effective requires in a medical man, according to President Eliot (who originated the course at the Harvard Medical School), the power of interesting description with telling exposition and moving exhortation. To apply these several cautions to psychiatry: the terrors of insanity and its treatment have held the boards far too long, and the more we are able to say with truth that will tend to lessen its horrors in the minds of the community, the better shall we serve the purposes of true psychiatry; and the more widely and generally the nature of our work is known, the more the dignity and importance of our calling is enhanced.

HEREDITY IN DISEASES OF THE NERVOUS SYSTEM WITH ESPECIAL REFERENCE TO HEREDITY IN EPILEPSY.*

BY PHILIP COOMBS KNAPP, A.M., M.D.,

Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

A belief in the heredity of many diseases, especially those of the nervous system, is one of the accepted tenets of medicine,—a tenet to which every one is tempted to subscribe, whether he notes the invasion of Friedreich's ataxia, Huntington's chorea, or muscular dystrophy, in member after member of some doomed family, or studies the social degradation of the Jukes [1] family, or the degeneration and extinction of the Spanish Hapsburgs.[2] It is a belief, too, which has been held even more strongly by the laity, from the days of the Hebrew prophets until the present time. With the development of the doctrine of the neuropathic or psychopathic predisposition by Griesinger the possibilities of morbid heredity in diseases of the nervous system became multiplied, and the studies of the French writers in particular, Dejerine,[3] Féré,[4] Le Gendre [5] and Paul Raymond,[6] have sought to establish heredity as the dominating etiological factor in the vast majority of nervous and mental diseases.

The whole doctrine of heredity, however, has been modified by the theories of Weismann,[7] which have been accepted by many biologists and a number of physicians. According to Weismann, as is well known, acquired characteristics are not transmitted to the descendant, but any influence which, developing in the lifetime of the individual from some external cause, injuriously attacks the germ plasma, may give rise to some defect or modification in the descendant. Weismann holds that there is a continuous transmission of the germ plasma which contains all the elements of the future being. The ovum, in dividing, transmits an integral part of itself to the new cells, so that the ovum of one generation comes directly from the ovum of the preceding generation, and the personal influence of the generator will have no effect upon the quality of the germ plasma, unless the germ plasma be injured by some external influence, such as trauma or poison. Binswanger [8] affirms that we can speak positively of an inherited morbid predisposition coming from the ancestry, only when germ plasma, pathologically altered in one or both individuals at the moment of procreation, has served to form the new individual. This pathological change in the germ plasma in the generators may be directly inherited from their parents or acquired during their own lives from various injurious causes, such as chronic intoxication (alcohol, morphine, lead), infection (syphilis, tuberculosis), constitutional disease (anemia, leukemia, chlorosis, diabetes, gout, arthritis deformans), or local diseases of the generative tract. This pathological alteration of the plasma leads to a general constitutional weakness of the individual, in whom later

*Read at the meeting of the American Neurological Association at Washington, May 8, 1907.

certain special factors may determine that the nervous system shall first or chiefly give evidence of that weakness.

Although Weismann's theories are not yet universally accepted, Le Gendre and Hähnle,[9] among others admitting that acquired characteristics may be inherited, and although Weismann himself has modified them somewhat, so as to admit certain possibilities of the transmission of seemingly acquired characteristics, or that acquired traits due to an external cause may act on a predisposition, the doctrine, as stated above, is of much importance in our conception of the part played by heredity in the etiology of disease.

Another feature in the manifestation of heredity has been pointed out by Galton,[10] and has been further emphasized by the teachings of Bouchard.[11] In various studies Galton has shown that, although certain characteristics are so common in certain families as to suggest hereditary influence, these peculiarities have a tendency to disappear in a few generations. He has formulated the law, too, that each parent contributes about one half to the make-up of the individual, each grandparent about one fourth, and each great-grandparent an eighth or less. Thus the sound parent may do something to correct the tare coming from the diseased parent.

Galton's ratios, however, are not always constant. Occasionally some ancestor seems to show a remarkable power of impressing his characteristics upon successive generations, as Ernest the Iron of Carinthia impressed the Hapsburg lip and the prognathous jaw upon several hundred descendants through eighteen generations,[12] or as Justin Morgan impressed the peculiar characteristics of the Morgan horse upon an uncounted progeny. The comparative study [13] of the Jukes and the Edwards family points to a similar power. Although some of this remarkable transmission may be accounted for by in-and-in breeding, yet there is much left unaccounted for which opposes Galton's ratios.

The theories of Mendel,[14] long forgotten and recently revived by De Vries,[15] Bateson [16] and others, explain this condition by the dominance of certain characters in heterozygous or impure individuals. According to Mendel, when two individuals possessing opposite characteristics come together, we may regard the germ cells as units. Each cell may contain one or the other of the two characteristics, but not both. These germ cells come together in pairs to constitute the body cells, and these body cells may be pure or homozygous, when both germ cells contain the same characteristic; or impure, or heterozygous, when each germ cell contains a different characteristic. If a given characteristic be dominant in the impure cell, this cell, although composed of two different germs, may resemble the pure cell composed of two similar germ cells. Mendel's theory, moreover, teaches that these impure individuals may give rise to pure types having the dominant characteristic, and that these pure types subsequently give rise to other pure types without variation, — in other words, that the special morbid characteristic of a race has a tendency to become fixed or to disappear, and in either event be reproduced subsequently without a change. According to his teachings, if an individual escapes the morbid defect of his faimly, he is likely to produce offspring without this defect, and thus Mendel finds little room for atavism.

The application of Mendel's theory to human heredity has hardly begun, and the complexity of the problem is so great that it is a question whether its practical bearings can be determined for many years to come. At all events, as Bateson has shown, the facts of heredity must be collected with far greater accuracy than has thus far been done. Bateson points out that data must be presented for each family separately, that the normal members must also be regarded, and that we must be assured that the cases are similar, that is, dependent on one pathological state. It requires but a glance at any collected body of statistics of heredity of nervous disease to show that these requisites have almost invariably been disregarded.

Recalling the various theories of Weismann and Mendel, if we turn to the recorded data of morbid heredity we find these data absolutely unsatisfactory, if not utterly worthless. The whole teaching as to the etiological importance of heredity rests upon a mass of inaccurate, undigested data which often have no bearing at all upon the real etiology of the disease under consideration.

In the ordinary discussions of nervous heredity we speak of similar and dissimilar heredity, — the latter manifesting itself as the neuro-psychopathic predisposition. Similar heredity is far less frequent than neuropathic heredity, and is seen most strikingly in certain rare diseases, — Friedreich's ataxia, Huntington's chorea, muscular dystrophy and the like. Occasionally it is noted in some of the more common diseases, especially in migraine, as is shown by a recent case under my observation, where migraine existed in eight out of sixteen members of a family in three generations. The fact that these rare diseases occur with remarkable frequency in the members of one family seems a striking demonstration of their hereditary character, especially when the occurrence of the disease is noted in generation after generation, with fatal regularity.

Nevertheless, this is not absolute proof that the disease is due to heredity. On the day that I write these words I have chanced to see two cases of Friedreich's ataxia. In one, a son of intelligent parents, no other case was known in the family. In the other no case was known in the antecedents, although two other cases had occurred in the same generation, in a sister and a cousin. The old theory of atavism, that a morbid tendency may be latent for several generations and then reappear, was formerly invoked to explain these cases where no traits of the disease could be found in parents, grandparents or collaterals of either generation, and this explanation could usually not be contradicted, because few of us know anything definite about our great-grandparents and remoter

ancestry. Even in the case of Queen Victoria nothing whatever is known of at least one of her great-grandparents.[17] This explanation, always somewhat hypothetical, can hardly be maintained to-day in face of the teaching of Mendel, that the impure types become unvarying after a generation or two. It occasionally happens, moreover, that we have the opportunity to note one of these rare diseases, apparently of sporadic origin, where no previous case can be discovered in a family, and later we observe its reappearance in a subsequent generation. I had under my care, some twenty years ago, a boy with muscular dystrophy, where no case could be discovered in the antecedents and no definite cause could be made out. Years later, another case of the disease manifested itself in his sister's child.

As I have just said, the occurrence in one family of a dozen or fifteen cases of a disease so rare that only a few hundred are recorded in medical literature, would seem conclusive proof of a hereditary influence at the least, and so much may be admitted. When once the disease is established, it is easy to conceive that the pathological state of the germ plasma may persist in individual after individual among the descendants. Yet these things are little help in understanding the genesis of the affection in individuals where no previous case has occurred in the antecedents. In these cases, too, we find nothing more than ordinary occurrences which might conceivably injure the germ plasma, occurrences which affect the majority of the race at some period or other, trivial accidents, common infections and the like. Even if we assume that such occurrences lead to pathological changes in the germ plasma which are transmitted to the descendants, giving rise to some abiotrophy, why is it that this banal accident so affects the germ plasma as always to cause an abiotrophy of a special set of nerve fibers, — certain ascending tracts in the cord, certain cortical cells, or some of the fibres of certain special groups of muscles?

De Vries' theory that the normal way in which new varieties are produced is by sudden mutation is perhaps a more satisfactory method of explaining the sporadic manifestation of these rare affections. De Vries has found that new varieties appear suddenly and are often constant from the first. He furthermore admits the possibility of a reproduction of the same mutation at different times and in different localities. Yet even if we assume that what is demonstrated as occurring in plant life is equally applicable to man, we find certain effects in the incidence of these diseases which are still inexplicable, such as the predominant occurrence in one sex and transmission by the other, or the disappearance of the disease in certain branches, and its persistence in others, although the tainted stock be crossed with new blood to the same extent in either case.

Although the origin of these rare diseases is still obscure, nevertheless it is possible that they may arise by sudden mutation and persist in the affected family by true heredity, owing to the change set up by this mutation in the germ plasma. It is incorrect, however, to regard heredity as the cause, and the tendency to recurrence of the disease in the affected family steadily diminishes by crossing with healthy individuals, as is shown by the teachings of Galton and Mendel. In this process of regeneration, however, although the affected stock may gradually be restored by cross-fertilization, a certain number of diseased individuals may be produced during one or more generations, until the morbid taint is obliterated, so that the old warning against breeding from such a stock is justified.

Turning now from these rare diseases in which the family occurrence is so great as to compel the belief that heredity plays a considerable part in their transmission, if not in their origin, we must next consider the part played by heredity in the production of the more common diseases of the nervous system. In these affections it is generally admitted that similar heredity is rare, and almost all writers agree in laying chief stress upon the neuropathic or psychopathic predisposition. In this predisposition are included all the different forms of insanity, all the functional and organic diseases of the nervous system, all peculiarities of mind and conduct, genius, the artistic temperament, criminality, alcoholism, pauperism, and even tuberculosis, cancer, diabetes and the different affections classed under arthritism.

The most available statistics for the study of the influence of this neuropathic heredity are those referring to the heredity of insanity; but these are useless for any study except that of the futility of human effort, since the vast amount of labor employed in their collection is wasted, on account of the habit of regarding insanity as one disease, and mixing the statistics of general paralysis, senile dementia, paranoia and all other forms of mental disease included in the various classifications together into one grand whole, and then drawing conclusions as to etiology, symptomatology, prognosis, prophylaxis and treatment, — a method as scientifically accurate as it would be to draw similar conclusions from a collection of cases of bronchitis, pleurisy, pneumonia, pulmonary tuberculosis, pulmonary cancer and embolic infarction of the lung, or, as Von Jauregg [18] suggests, to draw similar conclusions in regard to skin diseases from lumping together scarlet fever, favus, eczema, herpes zoster and psoriasis. I have therefore studied the statistics of the heredity of epilepsy, often regarded as the most hereditary of all nervous diseases,[19] in 320 patients of my own and in 1,200 patients at the Massachusetts Hospital for Epileptics, the data of which were put at my disposal by the kindness of Dr. Flood, and have compared them with the statistics cited by different authors. Even here the error which Bateson condemns, and all writers on insanity have fallen into, is not wholly avoided, since epilepsy must be regarded not as a single disease, but as a syndrome due to various affections of the brain. The error, however, is not quite so glaring as in the collections of statistics of "insanity."

The method which obtains in the collection of statistics as to neuropathic heredity in epilepsy and other nervous diseases seems to be as follows: a more or less careful inquiry is made as to the existence of any form of nervous or mental disease, and often the other diseases referred to above, not only in the direct ascendants, but also in the collaterals. Cousins are often included, as by Turner,[20] forgetful that we usually have there the introduction of a different stock. If any such disease is found, the case is regarded as manifesting neuropathic heredity, either similar or dissimilar; the total number of cases in the ascendants and collaterals is usually disregarded. If the heredity be dissimilar, as is usually the case, little or no attention is paid to the form or nature of the nervous affection occurring in the other members of the family. The percentage of cases showing neuropathic heredity thus ascertained is calculated. This percentage is apt to be larger than the percentage of any other one alleged cause, and the conclusion is drawn that neuropathic heredity is the chief determining factor in the production of epilepsy or any other form of nervous disease under consideration.

	No. of Cases.	Percentage neuropathic heredity.	Percentage similar heredity.	
Delasiauve (cited by Binswanger),	120	11	4	
Osler (Principles and Practice of Medicine. First edition, p. 948),	435	14.5	1	
Massachusetts Hospital for Epileptics,	1,200	14.5	4	2 in parents only
Herpin (cited by Binswanger),	380	21	2	
Echeverria (Epilepsy),	306	25		
Hammond (Diseases of the Nervous System. Ninth edition, p. 678),	396	28	16	
Reynolds (cited by Binswanger),	38	31		
Moreau (cited by Binswanger),	364	32		
Aronsohn (Abst. in Neurol. Centralbl., xiii, 631, 1894),	508	32	16	
Berger (cited by Binswanger),	71	32		
Knapp,	320	35	13.5	
Starr (Nervous Diseases, Organic and Functional, p. 741),	2,000	35	70.9	in parents only
Binswanger (Die Epilepsie. Nothnagel's Specielle Pathologie und Therapie, xii, 1. Abt. 1, p. 81),	121	36		
Gowers (Epilepsy. Second edition, p. 7),	2,400	40	30	
Hamilton (Pepper's System of Medicine, v, 468),	980	50		
Turner (Epilepsy, p. 26),	676	51	37.2	
Spratling (Epilepsy and its Treatment, p. 64),	1,070	56	16	
Bourneville (cited by Binswanger),	350	70		
Kraepelin (Psychiatrie. Sixth edition, ii, 473),		87	25	
Beau (cited by Binswanger),	232		9	
Leuret (cited by Binswanger),	106		10	

I have put down in the accompanying table the figures given by different writers and the percentage of neuropathic and similar heredity in epilepsy as found by them. This percentage varies from 11% in the old statistics of Delasiauve or 14½% in the statistics of the Massachusetts Hospital for Epileptics, to 87% claimed by Kraepelin; and the percentage of similar heredity varies from 1% as given by Osler to 37.2% as given by Turner. The discrepancies are so great as not to be readily explained, and they leave us in doubt as to the real prevalence of neuropathic heredity among epileptics. The same discrepancies occur in other statistics as to heredity in nervous disease. In Munich different men in the same asylum for the insane found in different years from 37% to 66% of morbid heredity. Krauss[21] finds that the percentages in the different asylums of New York State vary from 14% to 76%. Hähnle has collected equally discrepant statements concerning morbid heredity in special forms of mental disease, and Binswanger[22] quotes like variations in the statistics as to the heredity of hysteria.

It is undoubtedly true that the more exhaustive the inquiry and the more intelligent the patient or his family, the more information will be elicited and the greater will be the percentage of morbid heredity discovered; but I must confess to a certain degree of doubt as to whether this is a sufficient explanation of the variation shown in these percentages. At the Massachusetts Hospital for Epileptics, for example, the inquiry I think has been more minute and careful than in my own cases, and yet the percentage is less than one half of the percentage I have found and less than one third of that found in New York.

The etiological relation of syphilis to tabes has been established statistically by the discovery that whereas syphilis exists in about 10% of non-tabid patients, it exists in about 90% of tabid patients. This points to the fallacy of the conclusions drawn from the statistics as to morbid heredity in epilepsy and other nervous diseases. The percentage of neuropathic heredity in the healthy has been absolutely ignored, and it is only within recent years, and in a single community, that any extensive inquiry as to such heredity has been made, — in Zurich by Thomann-Koller[23] in 1895, and by Diem[24] in 1905. Naecke[25] and Jost[26] have made researches on a much smaller number of individuals, which seem far less thorough. Thomann-Koller found neuropathic heredity in 59% of 370 healthy persons, and Diem found such heredity in 66.9% of 1,193 healthy persons. In 370 insane, Thomann-Koller found 77% of morbid heredity, and Diem found the same percentage in 3,515 insane. They both conclude that the difference between the morbid heredity of the sane and the insane is so slight as to be disregarded, but they have both found that,

on limiting the inquiry to the morbid heredity in parents alone, and to the prevalence of mental disease only, excluding many of the forms of organic nervous disease, such as apoplexy, there is a greater amount of morbid heredity among the insane.

Another fallacy of this method of estimating morbid heredity is that little attention is paid to the nature or etiology of the forms of disease existing in the patient's family. Dejerine gives a family tree which he regards as one of the most conclusive in its indication of nervous heredity, and he counts in, as showing the neuropathic taint, deformity, deaf-mutism, idiocy, and exophthalmic goiter, as well as various forms of mental and nervous disease. It is so obvious that a case of nervous or mental disease of traumatic, infectious or toxic origin should not be considered as showing a special neuropathic taint, that it would seem impertinent to mention it, were it not so invariably ignored. The existence of several cases of epilepsy in the children of one family, even, cannot be regarded as proof of an inherited tendency, unless we know that they are not due to injury at birth from too small a pelvis.

The data at our disposal for determining the importance of heredity in the production of epilepsy, and of other forms of nervous and mental disease, are therefore inadequate, so far as they relate to a general neuropathic predisposition, since there is no proof that there are more neuropathic conditions in epileptics, for example, than in healthy persons, and the cases of nervous or mental disease that do occur may be due to causes affecting the individual alone, and not to morbid changes in the germ plasma. One thing alone points to the possibility of an hereditary influence in epilepsy. Turner [27] assumes that there are from one to three epileptics to every thousand persons. In the figures furnished me by Dr. Flood, in 1,200 cases of epilepsy there was a similar heredity in 29 parents. The exact number of parents is unknown, but estimating them at the maximum of 2,400, this would give over 12 cases of epilepsy in a thousand parents, which shows that there is a somewhat larger percentage of epilepsy than the average in the direct ascendants of the epileptic. Other statistics would, of course, increase this percentage. We see, therefore, that the data as to morbid heredity in the production of epilepsy are too misleading to warrant any definite conclusions, and the skepticism which has been expressed by various writers, from Delasiauve to Marie,[28] Sachs, Osler, and Von Jauregg has a reasonable foundation. We must not forget the old adage of Morgagni, — *Observationes perpendendæ non numerandæ sunt.* Each case must be considered on its own merits, and dissimilar affections must not be compared. We must be sure that a case is idiopathic epilepsy, and not epilepsy symptomatic of brain injury or cerebral infantile paralysis. We must study the whole life history of all the other members of the family previous to the generation of the patient, to determine the general physical health of the ascendants, and to eliminate the various accidents of pregnancy and childbirth. If nervous disease occurs in the family, we must consider its nature and character, whether indicative of an intrinsic nervous defect, or the result of some extrinsic cause, such as infection or trauma. Furthermore, we must study the patient's own life history, and decide how great an influence post-natal causes play. A child of thoroughly neurotic parents may owe much of his nervous disorder to faulty example, lack of proper restraint, defective training, late hours and improper feeding, and little to his direct inheritance. Only by such thorough study can we come to any definite knowledge of the prenatal causes of disease. If we continue to note "cousin had chorea," "uncle apoplectic," "brother paralyzed" (fractured spine), "aunt insane" (puerperal), and then decide that the patient has hereditary disease because such antecedents are found in 40% of the cases, although they exist in 60% of healthy persons, our conclusions will remain wholly unworthy of consideration.

In studying the etiology of epilepsy, the following case will show the importance of certain prenatal influences. Three older brothers in a family were strong and well. The youngest, always a delicate child, became epileptic. The grandparents on both sides showed no special indications of disease. The parents were healthy until the close of their lives, but they died two years after the birth of this patient, the one of cancer and the other of tuberculosis. No history of nervous disease or epilepsy existed in the family, but is there any question that the diseases which affected the parents led to a defect in the germ plasma and the production of a weaker child in whom epilepsy might develop? Such I believe to be the true interpretation of much of the so-called neuropathic predisposition. Some morbid process, constitutional disease, chronic intoxication, infection or local injury to the generative tract causes pathological changes in the germ plasma, and these changes give rise to a general constitutional weakness in the progeny. The child is not simply a neuropath or a psychopath, — he is a weakling. The constitutional weakness shows itself, as we often see, in the various stigmata of defective development and in general physical weakness, — a weak digestion, a small thorax, a hypoplastic aorta, deficient circulation, poor teeth, slender frame, delicate muscles, undeveloped sexual organs, a small spinal cord and the like. Given this constitutional weakness as a consequence of pathological changes in the germ plasma, various forms of nervous weakness may develop from extrinsic causes which determine whether the weakness shall be manifested in the nervous system, and if so, in what particular way it shall appear. In this way, too, acute infections may temporarily injure the germ plasma, so that the offspring conceived or in utero during the acute infection may show marked neurotic phenomena, while offspring conceived before and after the period of infection may be healthy, and the parents themselves may be for the rest of their lives in perfect

health. This explains the alleged preponderance of nervous defects in the children of alcoholic subjects, or the French "children of the siege." Unless, however, there be some general or local cause of injury to the germ plasma, it is doubtful whether any acquired mental or nervous disease of the ancestors can be the starting point of a pathologically tainted family, or even of sporadic cases of disease in the descendants (Binswanger, Forel [29]).

It is apparent, therefore, that the old data upon which the present doctrine of neuropathic heredity is based are misleading, and a much more thorough investigation of the whole question is required before we can draw trustworthy conclusions. Each individual case must be studied by itself, with due regard to the frequency of disease in the ascendants, especially in the direct line. Such disease in the collaterals seems to be of slight importance. The nature of each case must be carefully considered, especially with reference to possible injury to the germ plasma. The frequency of disease in the ascendants needs to be compared with the frequency of disease in the ascendants of healthy persons, and finally all possible causes of disease in the individual himself must be considered, and special attention must be paid to the whole life history of the patient, to determine how far a defective organization is at fault, and how far other influences, such as accidents of parturition, faulty training, bad examples, injuries, infections and intoxications have led to the development of the disease. Only by such study can we determine accurately the influence that heredity exerts.

At the present day there is an increasing dread among the laity of heredity in general, and neuropathic heredity in particular. This dread exerts a considerable influence upon marriage and the procreation of children, and threatens to give rise to ill-considered legislation. The present doctrines are certainly too pessimistic. Galton has pointed out the tendency to regeneration, or to return to the normal average in a generation or two, and further study may throw light upon the question raised by Mendel, as to whether morbid traits may be dominant or recessive. Weismann's teachings show us the importance of guarding against all injuries which may affect the germ plasma, so that it may be possible to guard against the procreation of weaklings, either with or without a history of long continued disease in the ancestry. Furthermore, investigation will often permit us to reassure the individual, when some case of nervous or mental disease develops in another member of the family, or even in himself, and to explain to him that it may indicate no disposition to similar disease in himself or his descendants.

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HENRIK KELLGREN AND HIS METHODS OF MANUAL TREATMENT.

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ALTHOUGH it may truly be said that the name of Henrik Kellgren is known almost throughout the civilized world, yet it must be conceded that few persons know anything definite about the man or the methods of treatment he employs. The following brief sketch of his life and work is intended to supply the particulars hitherto lacking.

Henrik Kellgren, born in 1837, at Alingsas in South Sweden, matriculated in 1855, and in 1858 became an officer in the Swedish army. From 1863 to 1865, he went through the course of training at the Royal Gymnastic Central Institute in Stockholm, and in the latter year received the diploma, whereupon he accepted a post as teacher of pedagogical gymnastics in Lidköping. It was in the latter place that he obtained his first case for treatment by medical gymnastics, and already at this early period he realized how important it is to give not merely local, but also general, treatment (of this more hereafter), but owing to his preoccupation with military duties, he was not yet led to develop any great interest in the subject of medical gymnastics as a whole.

At this time a series of troubles fell upon him, and the death of his wife and only son changed the course of his life. Leaving his native land, he went to Germany with the intention of proceeding to Algiers, where the French were then in conflict with the insurgent Arabs. At Bremen, he became acquainted with a medical gymnast, Dr. Ulrich, with whom he stayed for some weeks. This Dr. Ulrich was the first to recognize in young Kellgren, the great natural aptitude for medical gymnastics, which afterwards developed so remarkably; and he urged him to devote himself to this new career. In the end, Kellgren was prevailed upon, and in the year 1869, he settled in Gotha in Thuringia as medical gymnast.

He naturally began to treat on the lines laid down in the Royal Gymnastic Central Institute, but his real talent, aided by instinct, soon led him to remodel several of the exercises on his own

account. He further perceived how much good could be effected through direct stimulation of the nerves; consequently, he gradually developed a nerve treatment, consisting chiefly of frictions and vibrations, which he used in combination with improved active and passive (inclusive of duplicate) movements; and by these means he has treated with unexampled success a number of chronic cases of which some had been previously regarded as incurable. He has also attacked acute cases with wonderfully favorable results.[1]

Kellgren's fame soon spread abroad, and his practice grew enormously. His methods would, without doubt, have been widely taken up, at this time, by German doctors, but that owing to illness from overwork, Kellgren was obliged to retire from active work, and, when his health broke down, he for various reasons decided to come to London. Here, on his recovery, he established an important institute, and later on founded others also at Norderney (1877), Baden-Baden (1883), and Paris (1884). During the summer of 1886 he went, followed by a number of patients, to Sanna, near Jönköping, in Sweden, where he established a summer sanatorium, — now open all the year round, and where Kellgren himself often passes the greater part of the year.

Thousands of people owe their health to Kellgren, and some still live, who, at one time of their life, were regarded as utterly incurable. To how great an extent his successes have contributed to make medical gymnastics known and valued throughout the world is incalculable.

Although Kellgren's treatment has existed for more than thirty-five years, the literature relating to it has hitherto been scanty. Apart from a few newspaper articles which often contained erroneous accounts of Kellgren and his practice, Dr. Arvid Kellgren's work, "Vorträge über Massage" ("Lectures on Message," 1888), was the first to contain descriptions of some of his brother's exercises. In 1890, this book was translated into English, being amplified with descriptions of several more cases treated successfully by the Kellgren methods.

This was for some years followed by nothing of any importance, and, in consequence, I was led to publish my book entitled, "The Elements of Kellgren's Manual Treatment," which claims to be the first attempt at a systematic and scientific description of the subject.

It is probably due to the paucity of information obtainable as to Kellgren's methods that so many errors are prevalent with respect to them. Thus, some authors have been under the impression that the treatment consists wholly of vibrations, while others have believed that there is in it nothing more than hypnotism; since both these ideas are contrary to fact, it is obvious that those who held them had a most inadequate knowledge of the subject under review. The Kellgren treatment is based (a point I desire particularly to emphasize) on a scientific foundation, physiological and anatomical; and it is to be hoped that the profession may soon convince themselves of its true value.

In the following pages, I have aimed at describing the difference between the methods of Kellgren and those of Ling, or rather at indicating the progress achieved by the former beyond the latter.

Unfortunately, at the present time, both in Sweden and elsewhere, the handbook of Wide is regarded as authoritative on the subject of Ling's methods as practiced to-day; I say unfortunately, for it describes them in a form which, compared with earlier practice, shows distinct retrogression.

Most of the following descriptions are contained in my book; but, as the latter has only recently appeared and is not as yet widely known, such repetition as I have indulged in will not be superfluous.

I. Kellgren assigns particular value to the mechanical treatment of the nerves. This was formerly regarded as of very slight importance, P. H. Ling alone using a form of nerve pressure.[2] Branting (1844) brought forward as a novelty pressure of the phrenic nerve and lumbar nerves, and also (1846) of the spinal accessory and the sacral nerves. Somewhat later, nerve pressure, either with or without simultaneous vibrations, came more into use, but apparently without achieving any important results. The enthusiastic Neumann said in 1852: "This is a part of Ling's doctrine which his pupils have least worked out, although they and Branting are well aware that it is of the greatest importance; but its development is proportionately difficult, because the physiological ground work has so far been investigated only very insufficiently, and in part not at all." But in 1856, only four years later, he revised his verdict, saying: "I for my part consider now that these forms of movement can very well be dispensed with, as they can entirely and very advantageously be replaced by duplicate concentric movements." In the handbook of Hartelius (1870) pressure of the arm and leg nerves only is described, and but twenty lines are devoted to this subject in a volume of some three hundred and fifty pages. It should be added that here and there a few other nerves are specified as being suitable for similar treatment.

A few of the different forms of nerve friction and vibrations were described by Arvid Kellgren, and since then have been used by medical gymnasts, but without any acknowledgment of their source. In my book, I have described Kellgren's forms of nerve treatment in considerably greater detail.

The great merit of Kellgren has been his correct development of the processes referred to; in particular, he discovered that the main point of importance was not the pressure, but the mechanical movement set up in shaking the nerves through friction and vibration. And it was he who introduced manipulations following the course of the

[1] See Wretlind and Glatter, "Bref från Dr. Wretlind," Hygeia, Stockholm, Nov., 1872.— Feb., 1873. Allgemeine Betrachtungen über den werth der Heilgymnastik." Wien. Med. Presse, 1875.

[2] We must, of course, take into consideration the great progress made in the physiology of nerves between the eras of Ling and Kellgren; but this does not diminish the value of the modifications and discoveries made by Kellgren.

nerves, which manipulations are called " running nerve frictions and vibrations."

When we consider how everything in the human body is under the influence of the nerves and how many illnesses have their origin, not in the muscles, but in the nerves, it will easily be understood that nothing can be of so great service in these cases as movements of stimulative or sedative effect. Not only the cerebrospinal nerves can be directly treated by Kellgren, but also the sympathetic nerves. Before his time attempts had been made to deal in this way with the solar plexus and the cervical ganglia, but this was of rare occurrence, and in the handbook of Hartelius, for example, the subject is scarcely mentioned. Kellgren, however, discovered that it was possible to deal directly, or indirectly, by reflex action, with almost all sympathetic ganglia through the peripheral nerves that are in connection with them. Thus, for example, all the chest ganglia stand in direct physiological relation to the posterior branches of the dorsal nerves, and can be influenced through the fourth and fifth dorsal nerves on the left side, and the liver through the sixth and seventh on the right side, etc.

The value of all these forms of nerve-treatment can scarcely be over-rated, and it is most remarkable what favorable results can be obtained by them in acute cases; it can, indeed, be safely stated that without them such results would be unobtainable. The same applies to central nervous diseases, *e.g.*, bulbar paralysis, multiple sclerosis, spastic paraplegia, locomotor ataxia, tabes dorsalis, hydrocephalus, etc.

II. For other parts of the body, as well as for the nerves, Kellgren's vibrations and shakings, such as chest shaking and eye vibrations, are of great importance. In all the earlier literature of P. H. Ling, Branting, Rothstein, Roth, Neumann, etc., but a few lines are to be found dealing with such methods, and Hartelius also (1870) refers only briefly to shakings. These movements must consequently up to that time have remained quite undeveloped.

It was Kellgren who succeeded in working out — one might almost say who discovered — this new and splendid method of combating pain and disease. He also discovered the method of executing the vibrations in a manner involving the minimum of fatigue to the operator, so that they could be maintained for much longer periods and, at the same time with greater efficiency. For example, when the fingers are executing a vibration, the muscles in actual use should hardly be felt to contract. Only in a few cases, in which a particularly strong effect is desired, should the muscles of the upper arm or shoulder come into action. Unfortunately, medical gymnasts in general use only this latter method.

These vibrations can be executed either quickly or slowly. The maximum rate is about twelve per second.

Certain quite new forms of shaking and vibration have been developed by Kellgren, such as the following:

(1) So-called "suction-vibrations." The manipulator spreads out his fingers (Fig. 69 in my book) so that they lie on the patient's skin around the spot to be manipulated; they are then set into vibration while the finger joints are slowly flexed, causing the pressure on the skin gradually to increase. Such methods make it possible to treat the thyroid gland in Graves's disease, to accelerate the pointing of an abscess, etc.

(2) " Centrifugal running vibrations." These are running vibrations in a direction contrary to that of venous blood and lymph flow. These manipulations make it possible to treat lymphangitis, erysipelas, and to hinder the upward absorption of toxins.

These two new forms, together with the more ordinary forms of Kellgren's shakings and vibrations, are described in my book in considerable detail.

III. During the last twelve or fifteen years, mechanical vibrators have come largely into favor. The advocates of these " vibrators," " concussors," etc., maintain that the movements are rendered easier of administration, as they obviate exertion on the part of the gymnast, that they may be administered with perfect regularity as long as necessary, and finally that they may also be administered more rapidly. Some " vibrators " execute up to 200 vibrations per second.

That a greater rate than twelve per second should be of any advantage seems to me very doubtful. It must, of course, be conceded that a " vibrator " makes less demand on the manipulator, and its use is comprehensible when we consider that in general the vibrations as administered at present involve strong contraction of the arm and shoulder muscles, demanding great physical exertion, and are consequently only to be maintained for short periods at a sacrifice of sureness and delicacy of touch. As, however, the Kellgren vibrations (as already stated) are produced with a scarcely perceptible contraction of the muscles, the gymnast can execute and maintain them as long and as evenly as may be desired. I have myself never executed such vibrations for more than one hour and three quarters continuously, but I am certain that I could maintain them for a much longer period; the necessity for this, however, could but seldom arise.

The superiority of the Kellgren vibrations lies in the fact that the gymnast preserves the delicacy of his sense of touch, and is thus enabled at will and with great accuracy to vary the vigor, extent and rapidity of the movement, as well as the degree of pressure, whenever the condition of the patient indicates such alteration.

In certain cases characterized by a considerable amount of pain, *e.g.*, acute inflammations of the eye, abdomen and appendix, vibrations produced by machinery are entirely out of the question, as the machine can neither judge by touch nor adjust itself. In consequence of this it has become the practice in certain medico-mechanical institutes in certain cases, as when treating the head or neck, to interpose the gymnast's hand between the vibrator and the part to be manipulated.

Kellgren makes use of many new manipulations, and besides this he has modified already existing exercises. These modifications are difficult to specify exactly, and it is necessary to have technical experience in order to grasp fully the differences from — and advantages over — earlier methods. The following may be specified in particular:

(1) The so-called "Head exercise." Roth and Neumann speak of head-shaking that lasted for some seconds and was combined with passive head-rotation. In time, however, this manipulation fell into disuse and oblivion; the handbook of Hartelius does not mention it. Kellgren reintroduced the head-exercise and developed it further. The following form is used in fever cases:

(*a*) Head-lifting.

(*b*) Vibrations or other manipulations on the head with both hands simultaneously.

(*c*) Nerve frictions or vibrations, local or general.

(*d*) Repetition of head-lifting as conclusion.

(2) Passive movements for the liver, gall-bladder, pancreas, kidneys, spleen, etc., (described in detail in my treatise).

(3) Gymnastic treatment administered during childbirth, as well as during the puerperal state, to combat loss of blood, and as a preventive of puerperal fever.

(4) Modifications of many movements to render possible their use in acute cases; of this, more hereafter.

IV. It is at present the custom to make great use of massage only,—*i.e.*, stroking or kneading,—active movements being greatly neglected. Also vaseline and other fatty substances have come into considerable use in connection with massage; this was in earlier times unknown in the Ling school. Kellgren, on the other hand, assigns small value to such stroking and kneading, nor does he ever use vaseline or similar preparations; his grounds are the following:

(1) With vaseline the movement of the fingers employed in massaging is reduced to a gliding over the skin, the tissues underneath being but little influenced. In the Kellgren method, the fingers of the gymnast remain in contact with the skin, and thus they are enabled to really manipulate the parts beneath.

(2) In consequence of the massage-process the vaseline is rubbed into the opening of the sebaceous and sweat glands, with the result that massage corruptions are often induced, necessitating interruptions in the treatment.

It must further be conceded that, in the long run, massage has a weakening effect on the muscles manipulated. Kellgren administers kneading for only very brief periods at a time, and attaches more importance to duplicate movements, nerve-treatment and vibrations. And Kellgren dispenses entirely with the modern so-called "general massage."

V. In all resisted exercises, and in all passive movements involving movement of joints, Kellgren, where possible, makes use of the so-called "traction"; that is, the gymnast, during the movements, effects a passive stretching of the part manipulated, drawing the distal free end from the proximal fixed one. That in many cases a considerable extra effect is attained by these means will become strikingly clear on performing a movement first without, and then with, traction. This traction has been hitherto only described by Arvid Kellgren and myself.

Without "traction" it would in many cases of partial anchylosis, inflammation of joints, etc., be impossible to make use of any duplicate movements, while, by its aid, it is often possible to induce in paralyzed muscles a slight voluntary movement that would otherwise be unattainable.

VI. In all cases of local disease (except a few of mild character or short duration) Kellgren considers a certain amount of general treatment to be of benefit to the general health of the patient, and this for the following reasons:

(1) In the normal healthy body are contained many toxins and excretory products, which are, however, accompanied by no evil results because the body is able to eliminate them. So soon, however, as it becomes unable to do so, there result states of general or local illness, and the general treatment is of great use in restoring the lost power to eliminate.

(2) A local illness acts as a centre for producing toxins and excretory products, and more work than usual is demanded of the body to get rid of such accumulations. The general treatment facilitates this work.

(3) Toxins and excretory products that are of local origin, and are only treated locally always show a tendency to settle in other weak parts of the patient's system and to give rise to fresh morbid states. The general physical treatment hinders this.

(4) It may happen that only by means of the general treatment can the cause of a particular illness be not only discovered but removed. An inflamed ovary, for example, can, in course of time, through continual irritation of the muscles lying above it, cause a spinal curvature, and it would be an error to deal with the latter (subjective) affected part without, at the same time, administering treatment for the (objective) true source of illness. It would be easy to maintain the proposition above set forth by a long series of examples.

VII. The employment of the Kellgren treatment in acute cases, specific, infectious, or otherwise:

Early attempts of this kind were very few in number;[3] but already during his early years of practice in Gotha, Kellgren had worked out the treatment of acute cases and employed it with magnificent results. As early as 1873 Wretlind recorded several acute cases treated by Kellgren, and in 1875, Glatter spoke in laudatory terms of Kellgren's treatment of pneumonia. Kellgren

[3] "Pneumonia" by Branting (*vide* his farewell address, March 31, 1847), and H. Ling in "Branting's Efterlemnade Skrifter," 1882, p. xxvi; "Acute Pleurisy" by Melicher (*vide* Annual Reports); "Cholera" by Melicher, Becker ("Denkschrift über die Schwedische Heilgymnastik," 1864, p. 64), and others; Whooping Cough by various doctors and gymnasts.

was, in fact, the first to apply manual treatment to a great variety of acute cases that had never before been thus dealt with, and it can safely be said that no other form of treatment has led to such good results. I specify in particular the following illnesses:

Typhus, typhoid, scarlet fever, measles, rheumatic fever, erythema nodosum, erysipelas, acute inflammation of the larynx and pleura, acute tonsilitis, appendicitis, peritonitis, gastritis, enteritis, pericarditis, meningitis, etc.

It is quite impossible in so short a paper to describe the methods used in such cases, and I must restrict myself to referring the reader to the detailed descriptions contained in the following works:

(1) Arvid Kellgren: "Technic of Ling's System of Manual Treatment" (1890), containing eight cases. (In the German edition of this book an additional case is included.)

(2) Möller: "Zur Therapie der Akuten croupösen Pneumonie" (Deutsch. Med. Wochenschr., December, 1900, January, 1901), three cases.

(3) Cyriax: "The Elements of Kellgren's Manual Treatment" (1903); in all thirty-seven cases.

While treating acute cases by manual methods, Kellgren places no restrictions upon diet; he almost always allows the patient to eat what he happens to fancy (especially if the case has been under his care from the commencement), and he has never had any cause to regret his action in this respect. Also Kellgren generally allows the patient to leave his bed on condition that the temperature of the room is suitably warm and that proper precautions are taken against draughts, for it is his opinion that a little movement can only do the patient good. In this connection it must steadily be borne in mind that Kellgren's treatment contributes in a high degree to keeping the digestive organs and nerves in an efficient condition, in consequence of which the strength of the patient is well maintained, and he is enabled to offer considerably greater resistance to the illness. Under this treatment, a patient will scarcely desire to eat what he cannot digest, nor will he desire to leave his bed if not strong enough to do so. On this subject, I must also refer the reader to the experiments of Pawlow, which have shown (although not specifically in the case of fever) that the gastric juice is only secreted when food satisfies the taste. Kellgren is of opinion that to compel a patient to remain in bed against his will can only result in a lowering of his vitality, and, in addition, contribute to establishing a hypostatic congestion, especially of the kidneys, this being a condition to be particularly avoided.

VIII. The old doctrine of the Ling school that the gymnastic treatment is more efficacious, if unmixed with medicine, electricity, etc., has been largely lost sight of. Wide, for example, frequently combines medication with his gymnastics, a combination which can only seem to indicate deficiency on the part of the gymnastic treatment. A natural cure, to be really satisfactory, should not be accompanied by medicine.

This is especially true of central nervous diseases, with regard to which Kellgren has made the following observations: On the one hand, it is very difficult for the Kellgren treatment to effect much progress in cases that have previously been treated more or less unsuccessfully with electricity or strychnine, arsenic, etc.; on the other hand, where such methods have effected some improvement, the latter has been considerably accelerated as soon as the Kellgren method was tried.

It has occurred repeatedly that cases, even of some years' standing, which had never been subjected to electricity or strong medication, were more easily influenced for good, than others which were of more recent origin, but which had undergone such electric or medical treatment. It has also been observed that when certain cases, which had made good progress under the Kellgren treatment, were for some reason removed, in order to undergo a medical or electrical course, the change of treatment was ultimately for the worse.

IX. It often happens now that a doctor who is quite ignorant of medical gymnastics has to superintend a course of such treatment. In such a case, if the patient feels somewhat worse, the gymnastic treatment is often at once suspended, the patient is put to bed and drugs are prescribed, the gymnastic treatment being resumed only when some improvement has taken place. It is clear that, under such circumstances, it is impossible to judge of the efficacy of medical gymnastics.

The Kellgren treatment proceeds on very different lines. Should a patient feel somewhat worse than usual it is often because his illness reaches some small natural crisis. If the treatment is maintained through this period, it will be found subsequently that the patient's condition has materially improved. This improved condition may sometimes continue without any further perceptible modification until another similar crisis supervenes. So long as this condition continues the treatment can be varied as regards frequency, duration and force to suit the patient. When, however, the treatment is temporarily given up during a worse period, the crises are prevented, and as these are the means by which the body tries to get rid of disease, real improvement cannot occur if they are suppressed by enforced rest in bed, diet and drugs.

X. In conclusion, I wish to say a few words about diagnosis by means of palpation. This art, if I may so term it, has been particularly developed by Kellgren. It is very difficult to describe an art of this kind to any one who has not tried it. Kellgren's skill is shown by the fact that he not only feels the smallest local change in temperature, fullness, muscular resistance, etc., even when these changes can neither be seen nor measured. This gift has been the primary cause that enabled him to achieve such brilliant results. It is certain that several of his pupils possess this power to a greater or lesser degree; but time alone can show whether any of them can equal or legitimately succeed Henrik Kellgren.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

(Continued from No. 14, p. 467.)

THERE is one other cause which has been attributed to crimes from passion, whose importance I doubt very much. People have considered that one of the principal motives for these crimes is the taste for scandal and notoriety. They point out as a proof of their theory the dramatic attitude assumed by criminals from passion, either during the crime, or at the trial. It seems difficult to me to believe in the existence of such a motive. Criminals from passion occasionally do assume theatrical airs, but they merely borrow the external aspect of certain personages, while at the bottom of all their character remains unchanged. What ordinarily makes one suppose that these people are dramatic or theatrical in attitude is merely their own passion. No longer being retained by any consideration of conduct, they give vent to sentiments of abnormal violence and proclaim it widely. From this arises the analogy with the hero of the theater, who in reality is merely a criminal from passion copied from those of reality. Other than this we do not believe that the taste for dramatic notoriety has ever been the cause for the commission of a crime in a perfectly normal man, or at least we are unfamiliar with any such example.

Beside crimes from passion directly and immediately inspired by love or jealousy, one should also take into consideration crimes which have been committed merely to satisfy these passions. As an example, let us take a man who kills his mistress's husband during an attack of jealousy and afterwards commits suicide; this is a crime from passion. On the contrary he who kills his mistress's husband in order to marry her afterwards commits an ordinary murder. It is not suicide following the first crime which changes the nature of the crime, it merely proves the motive, namely, jealousy. It also indicates the character of the crime imposed by a passion, a crime from which the murderer can gain nothing and has no further interest for him. It is not the same in the second case to which we have alluded. There is no resemblance between a man who, during an attack of jealousy, kills his mistress, and of the one who in order to take a woman to himself becomes an assassin. One is a criminal belonging to a special class; he is certainly guilty and society should defend itself against him, but it should be done within a certain measure. The man that it must strike is normal; his sentiments are those of all decent people, only they have been possessed by a particular violence and were not moderated by a sufficiently strong will. The other type, on the contrary, is a criminal who has stolen or killed from love, but passion in this case is no longer an excuse, and at the utmost could only be used as an extenuating circumstance. Why is this? It is because the latter has abnormal sentiments; it is not merely the excessive development, I might say pathologic, of honorable and normal sentiments; it is the appearance of anti-social sentiments of the highest order, namely, the fact that the individual does not withdraw, in face of the crime, to satisfy his passion; he is subject to relapses and is a vulgar assassin.

These crimes may have numerous ends, and we will mention only a few examples. We have already spoken of crimes having for an end to procure money for a woman; urged on by her, or reduced to misery by her, a man will murder in order to procure money. In reality this is merely an instance in which the motive is one of personal gain, and the most that can be said is that a certain amount of leniency might be shown the criminal if passion deprived him of his ordinary will power when the act was committed. But these cases should not be classed among crimes from passion. Beside a murder perpetrated to procure money for the beloved one should be placed the murder which has for end the union of two lovers, and it is quite certain that this motive is the cause of many of these tragedies. Usually it is the woman who forces her lover to murder her husband so that they may be married afterwards. Her end is in the first place to be freer and also to legitimatize her love and proclaim it everywhere. It is also a crime which, in the idea of the perpetrators, should make them high in public consideration.

A woman has two means by which she can execute this project. She may either act herself, and then it is usually poison that she employs; or she may force her lover to kill her husband; and in order to attain this end she will employ all the means placed at her disposal, as has been recently illustrated by the female murderer Rogers, and her lover Perham. Then, again, she may excite her lover's jealousy, in which case the woman is simply a murderer in the ordinary sense of the term, while on the part of the man, the crime is one from passion. It may appear strange that the same crime may be one of passion as far as one of its perpetrators is concerned and not be as far as the other is concerned. It is, however, certain that it is not the crime, but the criminal, which is animated with passion, and one is consequently dealing with a subjective criterion, the motive which caused each of them to act at the time of the crime. It consequently results that, if this motive is not the same for each perpetrator of the same crime, the latter is not of the same nature as regards each one connected with it. The most extraordinary case is certainly a man killing his mistress's husband, when the latter is perfectly innocent and even is unaware of the tragedy; but, nevertheless, this happened in the Peltzer case which was tried at Brussels in 1882. Another peculiarity in this case was the fact that the assassin himself denounced his crime. Peltzer belonged to a good family, although personally he was deprived of any scruples. Being very intimate with a certain lawyer at Antwerp, he became amorous with the wife of the latter. The husband becoming aware of this asked him to break off all relations with him. Peltzer then started for America and appeared to renounce

his love. Sometime afterwards he came back and was so changed that no one recognized him, not even his former friend. He then brought the lawyer into an isolated house under the pretext of consulting him and then killed him. The house in which the crime was committed was too well chosen and too discreet, so the cadaver of the unfortunate lawyer was not found. From this fact his death could not be proven and his wife did not become the widow, but merely the wife of a husband who had disappeared and consequently she could not remarry.

What would have been a great success for another assassin, was a total failure for Peltzer. He was desirous of hastening things, and so wrote to the authorities at Brussels denouncing the crime and the place where the victim lay and so forth. The body of the unfortunate lawyer was found and the assassin very soon afterwards. The latter pretended that the murder took place during a moment of anger at the end of a discursion, but premeditation being absolutely established, the explanation was rejected. Peltzer had killed his victim with the hope of marrying his wife, who, for that matter, was in no manner an accomplice and did not even appear to love him.

We have thus passed in review all types of crimes from passion, but this does not imply that we have considered all crimes which are the consequences of love, jealousy, or hatred, because we have merely considered those which were directly inspired, and for this reason we have left aside abortion and infanticide, as well as duelling. It goes without saying that the criminals of this class are often of much interest, but unless one should greatly change the meaning of words, their crimes cannot be considered as crimes from passion.

Having now seen what we understand as a crime from passion, we will endeavor to distinguish it from those crimes with which it may be easily confounded and which I will term *crimes from pseudo-passion*. When they are carefully examined, their perpetrators will be found different from criminals from passion, and from the standpoint of criminality they may be placed in various categories. They are either irresponsible individuals or insane criminals; or, on the other hand, they may be ordinary murderers, fully responsible and guilty, which gives to a crime of cupidity or a rape the aspect of the crime from passion. We have endeavored to show that criminals from passion are far from being in a perfect condition of mental stability, and, in order to pass any kind of sentence upon them, it is necessary to prove that they had a notion of their acts.

The crime of an insane person may be confounded with a crime from passion in this way. Sometimes it is an ordinary insane person in whom ideas of persecution have taken on a peculiar form; he believes that his wife has deceived him, or he has been imposed upon by his mistress and he wishes to become avenged. Then, again, it may be jealousy which has altered the mind of an individual to such a point that it degenerates into a true case of insanity. Scientifically speaking, the subject is no longer merely a subject of jealousy, but is in reality a furious maniac. The question may be extremely difficult to decide, if a person afflicted by jealousy is in a condition of mind bordering on ideas of persecution. Among murderers there are many possessing weak minds; sometimes this weakness is made evident by an excessive susceptibility, and subjects afflicted with jealousy may even become provoked by a smile or derision. This insane fear of derision is one of the signs of a condition requiring an attentive examination in order to discover whether or not the accused is responsible.

Sometimes this mental weakness will become manifest by a particular facility to undergo suggestion, as may be seen by the following example: A workman, having laughingly said to a friend who was complaining of his wife: "When a man has a wife like that she should be thrown into the water"; the latter took the meaning seriously and threw his wife in. A crime may be so extraordinary, and at the same time so cruel, that magistrates are forced to extreme severity, but the crime is also so strange and so unexplainable that they hesitate to act for fear of wrongly sentencing an irresponsible person. Quite recently an abominable crime was committed in the little city of Fitthausen. A young and healthy husband, odiously mutilated his young wife, although no coquetry on her part could be a motive for the crime. When the criminal spoke of subjects foreign to his jealousy he reasoned correctly and quietly and nothing showed that he was insane, but when questioned as to the conduct of his wife his eyes became hyperemic; his countenance took on a hard and savage look and he accused the unfortunate victim of the lowest actions. His jealousy went as far as a paroxysm of insanity. Moreau of Tours has recorded a case of jealous insanity which took place in the small town of Balace. A landed proprieter by the name of Montée, blinded by an excessive jealousy, suspected that his wife was the mistress of a neighbor by the name of Baron. One day Montée hid himself behind a window in his house and fired a shot at his supposed rival, which instantly killed him. Immediately afterwards Montée took an axe and started towards the house of his victim. He went to the upper story where he found the victim's little girl about ten years old, seated in front of the fire. He broke her skull open with the axe. The assassin then started out to find his victim's wife, and going into a field, not being able to find her there, he slaughtered several sheep which were grazing. When leaving the field Montée went and hung himself on a neighboring tree.

In this case insanity is so evident that if the assassin had been arrested the question of responsibility would not even have been brought up and Montée would have been sent to the insane asylum, but it would appear to us that it was an instance of jealousy which was transformed into insanity.

Closely related to crimes from insanity there are

crimes from passion which in reality are merely crimes from alcohol. Intemperance goes arm in arm with *débauche*, and drunkenness only brings about wordy discussions. In December, 1902, the case of a certain Cormaire was tried in Paris. Cormaire was thirty-five years of age, whose father, an alcoholic, committed suicide during an attack of insanity. One evening he himself committed a crime during an attack of insanity which left no trace in his memory. Without any appreciable interest or provocation he pounced upon a *puella publica* and tried to cut her throat. Two days later, after a day of fever, he returned to the shop where he worked and read the account of the crime in a newspaper. Suddenly he was overcome by this detail, "the murderer had left his hat at the victim's house." The amnesia suddenly disappeared and he finally remembered the whole event. When arrested Cormaire was found absolutely irresponsible, but later on, during an attack of jealousy, he killed his mistress. Arrested again, he was submitted to another medical examination, and this time was considered responsible. It was, however, pointed out at the trial that Cormaire was not mentally well balanced, that he was the son of an alcoholic and an alcoholic himself, in other words a degenerate impregnated with alcohol. Insanity not being absolutely characteristic, at least for the last crime committed, caused the jury to render a verdict of guilty.

To sum up in cases of crimes committed by individuals who are recognized insane, the question of a sentence does not even come up, and criminal lunatics should be sent to asylums. For that matter there would be no legal interest to distinguish subjects of jealous insanity from those afflicted with ideas of persecution, like those of which we have spoken. If they have been made mention of here it is because occasionally they are acts strangely resembling crimes from passion, and a careful medical and psychologic examination can alone establish the fact whether or not the criminal is responsible.

Although it is frequently a delicate matter to characterize these crimes, which, from their nature, have the appearance of crimes from passion, how much more difficult it is for the Court and the jury to determine the nature of the crime when the accused affirms that he acted under the domain of passion, when in reality it was quite another motive which caused him to commit the crime. Innumerable are the crimes which take on the appearance of crimes from passion and which are in reality accomplished from cupidity, *débauche*, vanity, etc. The difficulty is to distinguish these crimes from true crimes from passion. When the accused appears upon the stand it is very frequently upon this point that the discussion turns between the government and the defence, namely, What is the motive which caused the murderer to perpetrate the crime?

Each will give his explanation. The defence pleading a blinding passion, while the government will uphold that the crime in question is not one of passion and has been committed by the accused for some interested motive.

Among the crimes having an appearance of passion and of interested motive we should first consider those of cupidity, such as the following example: Some twenty-five years ago a widow by the name of G. was a well-known character in the gallant world of Paris. She began to age and foresaw with terror the approach of the time when generous donators would no longer be in sufficient numbers to satisfy her needs. Her last lover was a very young and wealthy man, but without experience, and she resolved to attach him to herself for life. To accomplish this it was necessary to render marriage an impossibility for him, and, in order to attain this result, she resorted to a very simple means, namely, to disfigure the young man's face by vitriol so that he would be a subject of horror for all others. He then would be forever under her power. But with this plan she could not act herself and she consequently excited a certain X, a man of the people that she had taken for a lover. On a certain evening when the woman G. came home from the theatre with X, the young man already alluded to executed the crime which she had conceived, and inundated the young man with vitriol. She then took care of her victim with such a devotion that the Court had all the difficulty in the world to make her victim understand the guiltiness of his mistress.

Beside this crime, so extraordinary from its perversity and audaciousness, female vengeances are more frequently met with in which a disappointment in love is combined with the need of money. There are cases in which the pain is due to the departure of a lover, who certainly was inconstant, but who, more especially, forgot to give the indemnity hoped for by his mistress in case of rupture. The woman then threatens to make a scandal, and if this blackmailing scheme fails she sometimes carries her threats into execution. She finally poses as a victim of love. Such was the case of M. M., who, in 1880, avenged herself upon her lover who was on the point of getting married. She had hoped that for a long time to come, if not for always, he would attend to her needs, but when she heard of his marriage, she had vitriol thrown in his face by another woman over whom she had sufficient influence to make her execute the crime.

It is not always in illegitimate unions where cupidity takes the place of love, for beside *liaisons* of interest, there are also marriages for money, and here again we will meet with the so-called crimes from passion in which passion has never existed. A farmer, having sought the hand of a rich young woman in marriage, and after having hoped to obtain it, was so disappointed by the parents' refusal and so angered to see such an advantageous party escape him that he had the young girl meet him and, after having obliged her to accept him as a husband, plunged a knife into her abdomen.

(To be continued.)

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

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PROTOZOA.

DURING the last decade the protozoa, especially the pathogenic forms, have received considerable attention from investigators interested in the lower forms of animal life, and of these, the trypanosomes have probably been the favorite subject of study. Although the first of this group was described by Valentine more than sixty years ago, who found it in the blood of a salmon, and, although from time to time allied organisms have been identified, sustained work in this direction was not begun until some years later. When Evans in 1880 demonstrated that a disease of camels and horses, known as surra, was dependent upon the presence in the blood of the animal, of a protozoal organism, there was quickly instituted a series of experiments which had, as a result, an appreciation of the proper relation which should exist between plant and animal life as an exciter of infectious diseases. This organism, the trypanosome, may be briefly considered as a fusiform, more or less elongated body, about the length of the diameter of a blood corpuscle, possessed of a fin-like membrane, longitudinally, and a terminal flagellum. It was soon found that other diseases of animals as, nagana, mal de caderas, dourine, etc., might be ascribed to other members of this group. These discoveries attracted but little notice in the medical world until Dutton identified a trypanosome in the blood of a European, who had resided in the Gambia region, and Castellani showed the significance of its presence in the cephalo-rachidian fluid of negroes who were suffering from the disease known as "sleeping sickness." Thus far the conditions set up by the parasite have been met with, for the most part, in Africa, Asia, and South America; but Morax, in a recent paper,[1] has published the results of his work in the experimental pathology of the disease, paying especial regard to the ocular manifestations. He was struck by resemblances between certain corneal appearances in dourine and the well known lesions of interstitial keratitis observed in syphilis.

Nagana, the tsetse-fly disease, affects all domestic animals and many that are wild, and is invariably fatal to the horse and dog, although a certain percentage of cattle recover. The duration may be several weeks or several months, and in case of recovery a certain immunity seems to be established in the animal in question for this particular form, but not for others of the group, thereby suggesting a certain specific character. Man is naturally immune, probably through some peculiar property of his blood plasma. Symptomatically there is noticed fever, lymph infiltration of subcutaneous tissues of neck, abdomen and extremities, destruction of red blood corpuscles, extreme emaciation, blindness and the constant presence in the blood of a parasite which was identified by Bruce in 1894 and which bears his name. There seems to be but little doubt as to the rôle of the tsetse fly in the transmission of the disease, as infected and non-infected animals may run together with impunity in the absence of this particular fly. The process among the smaller mammals is quite acute and ocular complications are rare. The contrary obtains among the larger animals, the process being subacute and eye lesions more frequent. Here will be noticed a turbid, aqueous, fibrinous deposit in the anterior chamber and upon the iris, corneal opacities and a mucopurulent conjunctivitis. The parasite has been found in the conjunctival secretion and in the anterior chamber. Edema of the lids and face has occasionally been mentioned as occurring. In the case of the horse and ass the cornea has become quite opaque, even taking on the tint of porcelain, yet, notwithstanding the apparent severity of the corneal condition the opacities may disappear in the course of a few weeks.

Surra, the term implying a rotten or diseased condition, is a malady of horses and camels in India, although not peculiar to that particular country. Clinically it somewhat resembles nagana, as there exists a sort of pernicious anemia, fever, intermittent or remittent in type, emaciation, edema and lesions of eyes and lids. Evans, in 1880, found in the blood of infected animals, a trypanosome which now bears his name, and by the inoculation of which he has been able to reproduce a similar condition in the dog and horse. This organism so closely resembles that of Bruce, morphologically, that for differentiation it is necessary to study its cultural developmental characteristics upon some proper medium. Some other genera of biting fly than the tsetse must be responsible for its transmission, as infection may occur in regions where the tsetse is unknown. During a buffalo epidemic in Java a mucopurulent conjunctivitis and keratitis was frequently noticed. Five dogs became "blind," as the result of a hyena hunt. Among the cattle ocular complications take the form of a blepharo-conjunctivitis and keratitis, although blindness is rare. The disease is apt to pursue a rapid course, eventually terminating in blindness and death. In the case of laboratory animals, eye lesions are usually external and the organism will be found in the secretion.

Souma, a disease of cattle and horses in the Soudan, has been found to be due to a special parasite, the trypanosome Cazalboui, which, however, does not affect rodents or dogs. Corneal disturbances were noticed in an ass that had been inoculated with infected blood from an animal of like species. The upper half of each cornea became cloudy, and later a condition, somewhat resembling an ulcerative pannus, appeared, but absorbed before the death of the animal. There were no parasites found in the exudate.

Mal de caderas is the only trypanosomatic disease thus far recognized upon the American continent, is prevalent among horses in South Amer-

[1] Ann. d'Oculist., Dec., 1906.

ica and receives its name from eventual paralysis of the hind quarters before the death of the animal. Although edemas are usually absent, clinically, it resembles surra and nagana. The ass and mule resist, but dogs are susceptible, as well as rats, mice and other small rodents. It is apt to take on a mild type in the case of the larger animals. The parasite was first recognized by Elmassian in 1901 and received the name, trypanosoma equinum. As regards the ocular disturbances, it will be noted that the lids are swollen, there is chemosis and a foul mucopurulent discharge. Upon the cornea will be seen milky white spots, irregularly distributed and poorly outlined, resulting from a diffuse superficial interstitial keratitis, which, however, frequently absorbs, as does the hypopion, if present. Similar conditions obtain in dogs and rabbits, if inoculated.

Dourine is a disease of horses, not limited to the tropics, as it has been met with in many parts of Europe. Although due to a trypanosome in the blood, the equiperdum, transmission is believed to be due to sexual contact. Clinically it resembles the other diseases of the group, and paralysis usually precedes death. Conjunctivitis, keratitis, hypopium and lenticular opacities sometimes occur and the presence of the organism may be demonstrated in the conjunctival secretion of an inoculated rabbit. One or two months after intraperitoneal inoculation of several dogs and an ass interstitial keratitis with corneal opacities developed resulting in complete blindness. When the iris was visible it was seen to be inflamed and covered with a purulent or fibrinous exudate. The ciliary body was found to be involved. Anatomically the corneal opacities are found to be due to the presence of mononuclear leucocytes and trypanosomes in the interlamellar spaces and in the anterior chamber. The posterior segment of the globe was less affected. The dogs all died before showing any amelioration of the ocular symptoms. In the case of donkeys, opacities that may have developed may rapidly disappear, although if there is a tendency to ulcer formation, the inflammatory process may go on to panophthalmitis.

Human trypanosomiasis. — For a long time it was supposed that man was immune to this form of infection, and this is true in some instances, as, for example, surra, nagana, etc. Dutton, however, in 1901, recognized as a trypanosome, an organism which he detected in the human blood and which he named Tr. gambiensis. It has likewise been found in the cephalo-rachidian fluid. Following the invasion there appears intermittent fever with anemia, malaise, erythematous lesions and cutaneous edema. Somnolence and paralyses appear later. The ocular symptoms are few and unimportant. There may be a feeling of fatigue and unsteadiness of the type when reading, which will pass away after rest, providing it does not depend upon an error of refraction. The veins at the fundus may be somewhat enlarged. The conjunctival reflex is one of the last to disappear, and when this happens the prognosis is bad. Collins, who examined one of Manson's cases, stated that the fields were normal, pupils reacted and the media were clear. At each macula there was a superficial area of atrophic choroiditis, with pigment modification. In the right retina were some whitish, circular spots at a deeper plane than the vessels, and at each periphery were numerous spots, suggesting choroidal atrophy, some being more or less pigmented. Papilla normal. No hemorrhages. With such appearances, the possibility of a pre-existing specific chorio-retinitis should be considered.

Spirocheta pallida. — At the meeting of the German Ophthalmological Society, in 1905, Axenfeld, during the discussion of a paper on parenchymatous keratitis, and having in mind certain conditions which obtain in leprosy, stated that as we did not know the pathogenic factor causing syphilis, we should not exclude it from a clinically healthy-appearing cornea. Since that time, however, Dr. Greeff and others have been able to verify this statement, and as the result of work carried on with Hoffman, and also independently with Clausen, he was able to announce at a similar meeting in 1906 that he had been able to successfully inoculate the eyes of apes and rabbits, so that a few weeks later a tongue-shaped opacity appeared, which might seem to extend from the limbus centralwards. In the clear corneal area, in advance of the opacity, the spirocheta pallida could be detected without difficulty, in fresh cases, where they seemed to easily penetrate and multiply, whereas the opaque area had evidently been a battleground, where had taken place the death struggle between the previously existing spirochetæ and the thronging leucocytes. In this contest the odds seemed to be rather with the leucocytes, in the case of rabbits, as the manifestation seemed to be rather local in character; on the other hand, however, the greater diffusion of the disease and its closer resemblance to the analogous condition in man, in the case of the apes, rather suggested a supremacy in the pathogenic organism. As long ago as 1879 Klebs claimed that syphilis could be produced in apes, but this statement attracted very little attention at the time, and it was not until several years later that interest was sufficiently aroused by experimentation, undertaken by Metchnikoff, Roux, Neisser and Finger. Although anthropoid apes were at first supposed to be necessary, it was found that other species, which bore a still more remote relationship to man, were likewise susceptible to a somewhat atypical form of the disease. In 1881, Hansell, by the inoculation of rabbits with human syphilitic material, obtained appearances in the cornea and iris, closely resembling those observed in man. Schucht, quite recently, by using an emulsion of syphilitic inguinal gland, which he introduced into the eyeball, has obtained a parenchymatous keratitis and condylomatous iritis. Many spirochetæ were detected in horizontal corneal sections, but none in cross sections. He also succeeded in carrying the disease from apes to rabbits. Several contributions to the study of hereditary syphilis and the relation of the spir-

ochetæ thereto have appeared quite recently. Gouven has found the pallida in an apparently healthy cornea while examinating a syphilitic fetus. Schlimpert, from the examination of a macerated fetus and a prematurely delivered child, believes the organism to be less frequently found in the eye, as compared with other organs. They were, however, more numerous about the choroidal vessels than in the sclera or retina. They were also frequent in the deeper layers of the cornea, in the retrobulbar portion of the optic nerve and in the trunks of muscles. The lens and vitreous were found to be free. The contention between different zoölogists, as to whether the spirocheta pallida, or triponema pallidum, as suggested by Schaudinn, is to be considered as of the protozoa or not, is quite as interesting as is its etiological relation to syphilis. According to Schultz, it may be stated that this much of our knowledge regarding it is beyond dispute. It is a spiral organism, from four to twenty microns long and four tenths broad, with pointed ends, each of which possesses a single flagellum. The spirals are quite close and regular, averaging one micron in length, and liable to disappear when quiescent. There is neither an undulating membrane nor nuclear differentiation. The single polar flagellum, the large number of flexible spirals and the probability of longitudinal division rather favor its protozoan nature.

The following articles have been utilized in the preparation of this report: Morax: "Les affections oculaires dans les trypanosomiases," *Ann. d'Oculist.*, December, 1906. Scherber: "Ueber Spirochaetenerkrankungen," *Zeitschrift für Augenheilkunde*, February, 1907, as both contain excellent bibliographic references. The attention of the reader is also directed to a paper on "Trypanosomes," by Novy, which may be found in the first two numbers of the *Journal of the American Medical Association* of the current year, and also to one on the same subject by Greeff, contained in the *Reports of the German Ophthalmological Society* for 1906.

Book Reviews.

Essentials of Chemical Physiology. By W. D. HALLIBURTON, M.D., LL.D., F.R.S. Sixth edition, 258 pages. London and New York: Longmans, Green & Co. 1907.

In this sixth edition of his "Essentials of Chemical Physiology," Professor Halliburton has thoroughly revised this well-known book. Many of the parts, especially those concerned with the proteins, have been rewritten, and those concerned with coagulation of the blood and with respiration have been amplified to include the new knowledge in these subjects. The general character of the book remains unchanged and is too favorably known to need comment.

Essentials of Human Physiology. By D. NOEL PATON, M.D., B.Sc., F.R.C.P. Second edition, 425 pages. Chicago: W. T. Keener & Co: Edinburgh and London: William Green & Sons. 1905.

As the title of this book indicates, it is a statement of what Professor Paton regards as the essentials of the physiology of man. The book is characterized not only by an emphasis on the main facts of the science, but by simplicity and clearness of statement and by many illustrations. The ingenious diagrams illustrating physiological processes may be regarded as a unique feature. The book is intended, according to the author, to supplement the practical work and demonstrations from which alone a real knowledge of the subject can be gained.

Physiology of the Nervous System. By J. P. MORAT. English translation by H. W. SYERS. 680 pages, 263 illustrations. Chicago: W. T. Keener & Co. 1906.

This translation of the portion on the nervous system in Morat and Doyon's great "Treatise on Physiology" places before English readers an important comprehensive study of the nervous system. It summarizes in an encyclopedic manner the knowledge both of the structure and the function of the nervous system. The most elementary structure, the neuron, is first considered: its various forms, its conditions of irritability and the nature of nervous conduction. There is in this connection a discussion of the methods of stimulating nerves and the energies which can be evoked by stimulation.

Following the discussion of the nervous element, there is a section on the simpler relations of the elements, in reflexes and in segmental arrangements of reflex functions. The functional determinations of the cranial nerves are treated with special thoroughness.

The relations of impulses in reflexes, *i. e.*, inhibitions and augmentations, and the classification of general nervous functions, such as thermic and trophic effects, are next considered.

The transmission of impulse in the fiber tracts of the spinal cord, the functions of the sympathetic system (very clearly and fully expounded) and the important activities of the medulla are presented, along with an interesting discussion of consciousness and unconsciousness and the degrees of consciousness which may be recognized. Following this is the physiology of the cerebellum, the optic thalamus, corpora striata and the hemispheres, with a complete consideration of cerebral localization.

The volume will be of especial value to physiologists, neurologists and medical students especially interested in the nervous system and its functions. The final chapters in the innervations of the various sense organs, combined with its other features, make the book an important one also for the psychologist.

American Practice of Surgery, a Complete System of the Science and Art of Surgery. By representative surgeons of the United States and Canada. Editors, Joseph D. Bryant, M.D., LL.D.; Albert H. Buck, M.D., of New York City. Complete in 8 volumes. Volume III. Profusely illustrated. New York: William Wood & Co. 1907.

This work improves as successive volumes come from the press, and the list of contributors to Volume III speaks for sound writing, for we read the following well-known names: Eve of Nashville; Horsley of Richmond; Mason of the Army; Oliver of Cincinnati; Painter and Simmons of Boston; Park of Buffalo; Peters and Primrose of Toronto; Rambaud of New York, and Thomas of Philadelphia.

Volume III includes parts 11, 12, 13. Part 11 deals with poisoned wounds by Mason, including the bites and stings of animals and insects. This is an original and striking contribution, and the pages are well illustrated. Then there follows a chapter on Rabies, — a brief, satisfactory essay by Rambaud.

The bulk of the book — parts 12 and 13, 697 of the 760 pages — is taken up with the chapters on injuries and surgical diseases of bones and joints. Eve writes well on fractures; Thomas on pseudarthrosis; Peters on inflammation of bone; Park on noninflammatory affections of bones; Horsley on syphilis of bones; Simmons on bone tumors; Painter on nontuberculous and nontraumatic chronic inflammations of joints; Primrose on bone and joint tuberculosis, and Oliver on wounds of the joints.

How shall the unfortunate reviewer briefly sum up this immense mass of admirable writing? Suffice it to say that the writing is admirable; that the views expressed describe the best and most recent convictions on the pathology and treatment of these difficult subjects, and that this handsome volume certainly finds its place as one of the most important contributions to recent surgical literature.

Treatment of Caries of the Spine. Treatment of Congenital Dislocation of the Hip. By Dr. F. Calot. Translated by Dr. P. Ewald, with an introduction by Prof. D. Oscar Vulpius. Stuttgart: Published by Ferdinand Enke. 1906.

It is unusual to receive the writings of a French medical author through the medium of a German translation and endorsed by a German professor. This speaks both for the excellence of the original as well as for the energy of the German publishers.

Dr. Calot some years ago called attention to the rectification of the deformity of Pott's Disease by forcible correction. In the present monograph the means of the application of plaster bandages to be used in the treatment of tuberculous vertebral diseases are well described. The writer advocates the repeated injection of the developed abscesses with small doses of creosote without incision.

The statistics of Calot in the reduction of congenitally dislocated hips are usually good. The method of reduction may be briefly described as a development of the well known Paci-Lorenz method with a different position of the limb in after-treatment, this position being similar to that recommended by Dr. Mueller, of Chicago. In a few obstinate cases Calot has employed (instead of incision) a dilator for the constricted capsular ring, similar to a curved sinus dilator, introduced into the sac through a small skin incision.

Technique Orthopédique. By P. Redard. Paris: Published by F. R. de Rudeval. 1907.

A number of excellent books on orthopedic surgery are to be found in English, French and German. Articles, monographs, special journals in these languages and in Italian increase the literature of the specialty to such an extent that a writer on the subject requires much diligence and mental activity if he desires to keep abreast of the progress in his branch. It is therefore singular that in a specialty which demands particular acquaintance with the devising and use of apparatus there should be no book especially devoted to this especial part of orthopedic work. It is fitting that at last such a publication should appear and should come from France, the starting place of orthopedic surgery.

The book is useful in giving to the reader detailed descriptions of the apparatus and mechanism in use in the practice of orthopedic surgery, including plaster bandages.

Lateral Curvature of the Spine and Round Shoulders. By Robert W. Lovett. Philadelphia: P. Blakiston's Son & Co. 1907.

To the readers of the Journal the admirable work of Dr. Lovett is familiar as many of his articles embracing his investigations on the subject of scoliosis were published originally in the columns of the Boston Medical and Surgical Journal. These writings have been amplified and are published in an excellent monograph which can be cordially recommended to all specialists and to those interesting themselves in the study and treatment of curvature of the spine.

Besides a statement of his original investigations as to the normal movements of the spinal column the book contains excellent descriptions, amply illustrated, of the gymnastic exercises employed in correcting cases and in measures for correcting by means of plaster jackets.

A Manual of Surgery for Students and Physicians. By Francis T. Stewart, M.D., Professor of Surgery, Philadelphia Policlinic; Associate in Surgery, Jefferson Medical College; Out-Patient Surgeon to the Pennsylvania Hospital, etc. With 504 illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

This convenient volume of 778 small, closely printed pages is a compendium of well recognized views on surgery, and will doubtless be useful to students.

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POPULAR LECTURES ON INSANITY.

IN this issue of the JOURNAL we publish papers by Dr. P. C. Knapp, on Heredity, and Dr. H. R. Stedman, on Popular Lectures on Insanity. Both are subjects little understood and, therefore, regarding which most erroneous ideas prevail in the public mind. It will be remembered that last year lectures on the general subject of insanity were given in New York under the auspices of the New York Psychiatrical Society which were semi-popular in character. They were given in the Academy of Medicine, and were intended for physicians and such others as might care to learn of recent opinions regarding the always important subject of mental alienation. These lectures were a success, although possibly they did not reach the rank and file of the people. During last winter at the Harvard Medical School a series of popular lectures was given on a wide range of subjects in medicine, and the appeal made, particularly to the laity, to attend. Although the attendance varied somewhat, as might have been expected, from the differing popular interest of the various subjects presented, nevertheless, it was altogether gratifying and encouraging to those having the matter in charge, and demonstrated the desirability of continuing a similar course of lectures another winter. Through an oversight, rather than through intention, no lectures on the general subject of insanity were included in this course. This omission it is proposed to supply this winter.

In the paper by Dr. Stedman, read before the American Medico-Psychological Society in Washington, it is clear that both the importance and the difficulties of offering such a course of lectures to the laity are fully appreciated. The time, we believe, has come to make a more vigorous attempt than has heretofore been done to remove the curious misconceptions and morbid ideas regarding mental disturbance which have so long filled the popular mind. The subject is a difficult one to present; our knowledge is still vague; classifications are chaotic, and the popular impressions of the insane person are so deep seated that it is not to be supposed they will easily be removed, as, for example, has the fear of tuberculosis. What such a course of lectures as Dr. Stedman proposes should accomplish is to bring before the public certain ascertained facts, and particularly to take every reasonable means of allaying popular fear. The dread of commitment to a hospital for the insane is also still widespread, and the conception of treatment in such institutions wide of the facts. The public should be educated in these matters and at the earliest possible moment. There is, perhaps, no better means of accomplishing this result than by the means which Dr. Stedman suggests.

We are glad also to call attention to Dr. Knapp's conservative interpretation of statistics regarding heredity. There are few subjects about which the public at large, and even the profession, have vaguer notions than this of the significance of the hereditary transmission of disease, and many sins have certainly been committed in its name. This subject should also be considered in popular lectures, but only at the hands of a person who combines much knowledge and experience with the saving grace of tact and good judgment.

In general, we are altogether in favor of the plan outlined by Dr. Stedman, and are confident that good will ultimately come from the judicious dissemination of knowledge regarding the causes, course and treatment, both in institutions and at home, of the various forms of insanity.

CLOSING OF CAMBRIDGE SCHOOL OF NURSING.

IN our issue of May 25, 1905, we commented editorially on a school of nursing, which was at that time being established in Cambridge, Mass. We said, in part, " We have on various occasions commented on this tendency (namely, the tendency to exalt the work of nursing to the rank of a so-called liberal profession) and expressed a degree of skepticism regarding this expansion of the work of nursing. . . . In the minds of those

promoting the further education of nurses, it is clear that greater efficiency is to be attained by the new method than by the old. We have no desire to express an opinion on this point, but we are convinced that the success of the new movement cannot be assured until many years of experience have passed."

It has been announced within a few days that this school, auspiciously begun two years ago, has been closed for lack of students and proper support. When the establishment of this school for the training of nurses was agitated, it was designed to lay special stress upon the educational side of nursing, and the school was in some respects modeled after that at the Waltham, Mass., Hospital, which has been conducted for many years with great success, by Dr. Alfred Worcester and his colleagues. This was also the time when the question was agitated as to the desirability of nurses paying for their education, rather than being paid for their services. In pursuance of the general plan that nursing should be regarded in the light of a liberal education, a suitable house was secured in Cambridge, and the school was opened in October, 1905, with eight students. A charge for tuition of $150 was made for the first year, and $75 for each of the succeeding years of the four years' course. A year later but six pupils applied for instruction, and this year there have been seven applicants, too few to make possible a further continuance of the work in the estimation of the executive committee. Of the twenty-one students enrolled since the opening of the school, nearly one half were unable to pay the fees at required intervals and concessions were necessarily made. The course was then reduced to three years and six months, and the price of tuition also reduced, but this also failed to bring up the numbers. It is reported that there has been some difficulty of late in filling the Waltham Hospital School for Nurses, and, in general, the plan of charging nurses for their tuition has given place to the method formerly in vogue.

We bring this matter up again at this time, in the first place, to express our regret that this commendable, if somewhat chimerical, movement for the higher education of nurses has failed. More important than this, however, is the indication it gives regarding the general status of nursing in this and, no doubt, in other communities. As we have frequently had occasion to say, we have long felt that the exaltation of nursing to the status of a liberal profession, as some of its advocates seem to desire, is a mistake. There is as yet no evidence that young women in appreciable numbers will be willing to devote four years to training as nurses, in the meantime paying for their tuition; this experiment, undertaken at Cambridge, certainly does its part in bearing out this statement. There is small doubt in our mind that the limit of the training of nurses has been reached, and that the wave of enthusiasm for more elaborate teaching has begun to recede. The Cambridge School of Nursing, which has just closed its doors, was a product of this over-enthusiasm. There was every reason to think at that time, and we have no doubt that the executive committee were imbued with the opinion, that there was need of just such a training school and that applicants would be forthcoming to render it an unquestioned success. Predictions as to its outcome would have been fruitless, and we mention the failure of the movement merely as indicative of the somewhat abnormal condition of the popular attitude toward the training of nurses. We shall, no doubt, continue to have trained nurses who have long since proved themselves indispensable to medical practice, but both for their sakes and for that of the medical profession, it is very desirable that the limitations of their training should be defined as sharply as possible.

MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 9, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 29, scarlatina 37, typhoid fever 20, measles 8, tuberculosis 31, smallpox 0.

The death-rate of the reported deaths for the week ending Oct. 9, 1907, was 18.48.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 5, 1907, was 207, against 227 the corresponding week of last year, showing a decrease of 20 deaths and making the death-rate for the week 17.71. Of this number 107 were males and 100 were females; 203 were white and 4 colored; 149 were born in the United States, 56 in foreign countries and 2 unknown; 45 were of American parentage, 136 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 30 cases and 1 death; scarlatina, 32 cases and 1 death; typhoid fever, 20 cases and 0 deaths;

measles, 10 cases and 0 deaths; tuberculosis, 50 cases and 20 deaths; smallpox, 0 case and 0 deaths. The deaths from pneumonia were 21, whooping cough 0, heart disease 16, bronchitis 3 and marasmus 11. There were 6 deaths from violent causes. The number of children who died under one year was 66; the number under five years, 85. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 61.

There were 3 cases and 3 deaths reported from cerebrospinal meningitis during the week.

ANNUAL MEETING OF NEW HAMPSHIRE SURGICAL CLUB. — The twelfth annual meeting of the New Hampshire Surgical Club was held at the Pemigewasset, Plymouth, N. H., Sept. 18, with a good attendance of members and their ladies. Dr. Joel F. Goldthwait, of Boston, read an interesting paper on "Non-Tuberculous Diseases of the Joints." This paper was discussed by Dr. Gile, of Hanover, Dr. Smith, of Hanover, and Dr. Prouty, of Keene. Dr. E. L. Bell presented a paper of much importance, "A Medico-Legal Case." The President, Dr. Frank Blaisdell, of Goffstown, gave the annual address on "The New Hampshire Surgeons from 1800 to 1900." The annual banquet was held at eight o'clock in the evening, and was followed by toasts: "The New Hampshire Surgical Club," Dr. Frank Blaisdell, "Our State Society," Dr. John M. Gile, "The General Practitioner and the Specialist," Dr. Goldthwait, "The Clergyman and the Doctor," Rev. Doran, "The Auto and the Doctor," Dr. James Greely, "The Surgeon in the Lumber Camp," Dr. E. L. Bell, "The Doctor's Vacation," Dr. Kingsford. The following officers were elected for the ensuing year: Dr. N. W. McMurphy, of Gilmanton, president. Dr. A. W. Shea, of Nashua, vice-president. Dr. J. M. Town, of Manchester, secretary and treasurer.

NEW YORK.

ROOF GARDEN FOR ST. LUKE'S HOSPITAL. — Plans have been filed with the Building Department for an addition to St. Luke's Hospital, in the shape of an elaborate roof garden on the Muhlenberg pavilion of the central administration building, which is to cost $20,000.

LAWS REGARDING SALE OF COCAINE AND ALLIED DRUGS. — In the new law which recently went into effect in the State of New York which makes it a penal offense to sell at retail cocaine or any preparation containing it except upon the written prescription of a duly registered physician, the same restrictions are enforced regarding alpha and beta eucaine. Proper safeguards are also prescribed for the wholesale disposal of these drugs.

BATHS FOR WORKING PEOPLE. — In the section on "Professional Hygiene and Care of the Working Classes" of the International Congress of Hygiene and Demography at Berlin, Dr. Simon Baruch, professor of hydrotherapy in the medical department of Columbia University, read a paper on Sept. 25 on "Baths for Working People," in which he made a strong plea for free cleansing baths. In the course of it he said that the river baths supplied by municipalities, while refreshing and pleasant, were not sanitary in the true sense of the word, and were to be regarded rather as a luxury than a necessity. The fact that propriety demands that women be entirely clothed, and men partially covered, militates against their capacity for cleansing. The application of soap is impossible, and without soap there can be no removal of impurities.

FEES OF EXPERTS IN THAW TRIAL. — The following amounts, for the services of alienists and experts in connection with the Thaw case, have been sanctioned by the controller: Dr. Carlos F. MacDonald, $6,300; Dr. Austin Flint, $5,315; Dr. William Maybon, $3,987; Dr. Robert C. Kemp, $3,102; Dr. A. R. Diefendorf, $990; Dr. William B. Pritchard, $420; Dr. Albert W. Ferris, $380; Dr. William Hirsch, $420; Dr. R. A. Witthaus, $142; Dr. August Hoch, $90.

BEQUESTS. — By the will of the late D. Willis James, of New York, $1,000,000, in sums of $100,000 to each, is bequeathed to ten universities, benevolent societies and institutions, among which is St. Luke's Hospital.

BEQUESTS TO CHARITIES. — By the will of the late Gen. Charles E. Furlong, of New York, more than $150,000 is left to charities. Among the institutions receiving $5,000 each are the following: Nursery and Child's Hospital, New York Infirmary for Women and Children, New York Foundling Asylum, and the New York Infant Asylum.

A LECTURE ON TYPHOID FEVER. — A lecture was given Oct. 5 at the Library Building of the Medical Society of Kings County, in Brooklyn, by Dr. Darlington, President of the Health Department, under the joint auspices of the Kings County Medical Society and the Brooklyn Institute. The attendance was so gratifying that Dr. Glentworth R. Butler, the president of the Medical Society, said, in introducing Dr. Darling-

ton, that ample encouragement was afforded for the repetition of similar lectures on topics pertaining to the public health in the future. The subject of the evening was "Typhoid Fever and Other Infectious Diseases; How They are Spread," and the keynote of the lecture was given in the opening sentence: "In speaking on the subject of contagious diseases one should have the fact firmly fixed in his mind that the statement that a disease is of an infectious character carries with it the thought that it is also absolutely preventable." In the Borough of Brooklyn, Dr. Darlington said, there had of late been a steady decrease in the number of cases of typhoid reported. In 1905 there were, in 1906, 1,200, and this year, so far, 600. In a city like New York, while contagion might be held in check, it could never be wholly eliminated. Many cases of infectious disease went untreated and so escaped detection, and one of the worst phases of the situation was the neglect of some physicians to report their cases. Co-operation of each individual and physician in the community was necessary to assure any efforts towards ideal attainments, and co-operation could only be reached by educating the public as to its vital importance. Public lectures, the public press, co-operation with philanthropic societies, printed instructions and personal efforts were all valuable aids. In the course of his remarks, the lecturer made a strong plea for a filtration plant to meet the requirements of the city, and deplored the fact that all improvements looking to its welfare moved so slowly and met with so many obstacles. In conclusion, he announced that the corner-stone of the new Board of Health Building, which is to be erected in Brooklyn, and which he stated would be the finest building of its kind in the world, would probably be laid in December.

Obituaries.

HENRY WATSON DUDLEY, M.D.

In Memoriam.

From time immemorial it has been the custom to mingle with laments for the dead eulogies of their well spent lives. We regret that the time has come when it becomes our sad duty to record the death of Dr. Dudley.

We realize that we have not the gift of language or power of speech to correctly portray his strength of mind, the nobility of his character and those qualities he possessed, which are not easily expressed in words, that endeared him to so many of us.

There are three elements which unite to produce a career like Dr. Dudley's. That which his ancestry gives; that which opportunity gives and that which he himself develops.

Among his distinguished ancestors were Thomas Dudley, the Colonial Governor, Rev. Samuel Dudley, who settled in Exeter, N. H., in 1650, and married the daughter of Governor Winthrop; Stephen Dudley, who was born in Exeter and married the daughter of Hon. John Gilman; Deacon Stephen Dudley, who settled in Gilmanton in 1774 and was one of the petitioners for the first town meeting in 1776, and was also one of the original members of the church formed in 1774; Dr. William Smith, the pioneer doctor of Gilmanton, and for some time the only doctor nearer than Concord, whose practice extended out thirty miles, when the only guides to conduct him through the wilderness were spotted trees. He was Dr. Dudley's great-grandfather.

Dr. Dudley was educated in the public schools of his native town, fitting for college at Gilmanton Academy, entering that institution when seventeen years of age and graduating in the Class of '51. He taught in the high school a few years and served as member of the School Commission of Belknap County, N. H., and also as member of the State Board of Education of New Hampshire, in 1861, 1862 and 1863. He taught in Culpepper, Va., at the time of the famous John Brown raid in 1859.

He took his first course of lectures at Dartmouth Medical School, and completed his course in medicine at Harvard Medical School, graduating in March, 1864. He was a member of the Hatherly Medical Club and was identified with the Massachusetts Medical Society since 1866, and among the most prominent in the District Society, having served as its president and held other important offices, being a Counsellor from 1883 up to the time of his death.

He was affiliated with the Masonic fraternity, being a Knight Templar. He did not seek public office, but served on the School Board of Abington during the past ten years of his life, rendering valuable service to the educational interests of the town.

He was Medical Examiner for the second Plymouth District, having held that office since 1890, succeeding Dr. J. C. Gleason. He was a member of the Massachusetts Medico-Legal Society since Feb. 4, 1891. He was Professor of Pathology at Tufts College Medical School, from 1893 to 1900, and lecturer on Legal Medicine from 1901 to 1906. Noteworthy among his characteristics were the interest he took in medical meetings, his ethics and his supreme contempt for the unethical, his devotion to scientific knowledge and his aversion to hypocrisy and fraud.

He was liberally endowed with the most attractive qualities. Strong and active in mind and body, he could assert and express himself with power and force when the occasion required. The duration of his life, the usefulness of his labors, the elevation of his sentiments, and the nobility of his character united to form an attractive personality and a highly instructive and admirable career.

Resolved, That while we are ever mindful of the

uncertainty of human existence and the changes that are constantly going on in our midst, we desire to express to the family of the deceased our appreciation of his superior talents and his noble character.

Resolved, That we extend our heart-felt sympathy to the family of the deceased.

GILMAN OSGOOD, M.D.,
FRED J. RIPLEY, M.D.,
A. ELLIOT PAINE, M.D.,
Committee on Resolutions.

At a meeting of the Massachusetts Medico-Legal Society, held in Boston, Oct. 2, 1907, it was voted that the above resolutions be adopted and a copy furnished the BOSTON MEDICAL AND SURGICAL JOURNAL for publication.

OLIVER H. HOWE, M.D.,
Recording Secretary.

ALFRED H. GOULD, M.D.

DR. ALFRED H. GOULD died Oct. 2, after an illness of about one week, of an acute infection. Dr. Gould was born in Medford, Mass., and was thirty-four years old at the time of his death. He graduated from Harvard College in 1896 and from the Harvard Medical School in 1900. He thereafter served as a surgical house officer at the Massachusetts General Hospital, and after leaving that institution devoted much time to work in the laboratory and to experimental research on surgical subjects. The main result of this industry was a volume entitled "The Technic of Operations upon the Intestines and Stomach," published by the W. B. Saunders Company in 1906. Dr. Gould had recently been appointed an assistant in surgery in the Harvard Medical School and gave high promise of a successful surgical career. Through the book which we have mentioned he was coming to be widely known, and his course given at the Medical School on operative technique was sought by many practitioners, particularly those connected with the United States Navy. In his death the profession loses an industrious student, a teacher of promise, and a man from whom much might have been expected in the future.

Current Literature.

MEDICAL RECORD.
SEPT. 14, 1907.

1. ALLEN, D. B. *Cancer of the Head of the Pancreas.*
2. *EINHORN, M. *On Flatulence and its Treatment.*
3. DOUGLAS, C. J. *Morphinism.*
4. BERRY, T. D. *An Account of the Destruction of Mosquitoes in the "Original Infected District" in the New Orleans Epidemic of 1905.*
5. LEDERER, W. J. *Nutrition: A Factor in Tooth Development.*
6. MEYER, W. *Phthisiotherapy by Means of Emulsion Bacilli (Koch).*
7. WELLS, J. H. *Removal of a Large Thyroid Tumor of the Neck; Apparent Death; Recovery upon Removal of the Artery Forceps.*
8. LYSDTON, G. F. *Intercurrent Typhoid Fever in Surgical and Renal Cases.*

2. Einhorn says that flatulence may be associated with the stomach alone, or with the intestine. When primary it is not caused by fermentation, but by swallowing of air. The sphincter muscles of the digestive canal are principally affected. It may exist for a long time without serious consequences. In acute and chronic gastric catarrh there is a real increase in the amount of gas in the stomach and a lessened absorption of it. Flatulence can be lessened by distracting the attention of the patient from his own sensations. When it is secondary it results from cardiac, circulatory, or respiratory diseases, and the relief by belching is rather imaginary than real. In primary flatulence treatment consists in the effort not to belch, with a simple diet and avoidance of beverages and foods that produce gas.

NEW YORK MEDICAL JOURNAL.
SEPT. 14, 1907.

1. GRANT, J. A. *Electrolysis and the Nervous System.*
2. WHITING, A. D. *The Ideal Ligature.*
3. *HAWES, J. B., 2D. *Tuberculosis Classes.*
4. GALLANT, A. E. *Movable Kidney in the Genesis of Bile Duct Disease.*
5. BENEDICT, S. R. *The Detection and Estimation of Reducing Sugars.*
6. BRAV, A. *Traumatic Edema of the Cornea in the New Born Infant.*
7. PEDERSEN, V. C. *Instructions for Those Having Chancroids.*
8. CONDON, A. P. *An Analysis of the Cardinal Symptoms of Ileus.*

3. This is a detailed account of the management of the tuberculosis class. It gives all the necessary information for the establishment of such a class, including the routine directions given to nurses, volunteer assistants and patients, as employed by Hawes in his classes.

[R. I. L.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
SEPT. 14, 1907.

1. BECK, H. G., AND STOKES, W. R. *An Epidemic Pneumococcic Catarrhal Disease.*
2. MENDEL, L. B., AND BROWN, E. W. *The Rate of Elimination of Uric Acid in Man.*
3. MUNRO, J. C. *Dynamic Ileus.*
4. MAYO, W. J. *Resection for the Relief of Intestinal Obstruction.*
5. BROWNING, C. C. *Public Provision for Incipient Cases of Tuberculosis, Sanatoria and Dispensaries.*
6. PAQUIN, P. *Climate and Outdoor Life in the Treatment of Tuberculosis.*
7. DUNN, A. D. *Mucous Colitis.*
8. *ROGERS, J., AND TORREY, J. C. *The Treatment of Gonorrheal Infections by a Specific Antiserum.*
9. HARLAND, W. B. G. *The Larynx in Locomotor Ataxia.*
10. BRYANT, W. S. *Cleansing Treatment of Chronic Suppuration of the Middle Ear.*
11. MCKERNON, J. F. *Otitic Phlebitis: Its Symptomatology, Diagnosis and Treatment.*
12. *FLEISCHMAN, P., AND BUTLER, W. J. *Serum Diagnosis of Syphilis.*

8. Rogers and Torrey have prepared a specific antiserum by inoculating animals with increasing doses of gonococci, at first devitalized, but finally using living organisms, grown on ascitic agar. The serum of these animals will agglutinate gonococci in high dilutions. They prefer a polyvalent serum, made from several strains of gonococci. This serum has been used in a series of 98 cases of gonococcal arthritis. They found the serum efficacious in 80% of the cases in a fairly acute stage. In chronic cases the results are not so encouraging, but as a rule there are here actual structural changes in the joint. They found the serum useless in acute and chronic urethritis and in gonococcal conjunctivitis. In epididymitis, salpingitis and iritis they think the outlook is promising.

12. Fleischman and Butler employed the method of Wasserman for demonstration of the antibodies in the body fluids of syphilitis. This method depends on the principle of hemolysis and is too complicated for the limits of this abstract. The authors were able to determine with almost positive certainty in a large number of cases the existence of syphilis in an individual, irrespective of the length of time since infection. The luetic reaction is most intense in the untreated, and is faint or may even be absent in certain cases that have been well treated and are apparently entirely cured. [R. I. L.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 31. JULY 30, 1907.

1. *ROLLY, D. *The Diagnosis of Genito-Urinary Tuberculosis.*
2. MORO, E. *The Clinical Aspect of the Alexin Test.*
3. *SEEL, E. *Combinations of Phenol with Phenolates and Their Advantages as Practical Antiseptics.*
4. GEIGEL, D. *Vicarious Respiration.*
5. REINECKE, P. *Eclampsia without Convulsions.*
6. *LOEHLEIN, M. *Brain Abscess caused by the Streptothrix.*
7. DÖLGER, R. *Diagnosis of Simulated Deafness. Detection of Real Abnormalities under Simulated Disturbances of Hearing.*
8. ERB, W. *An Answer to the Criticisms of My Gonorrhea Statistics.*
9. TEUFFEL, E. *A New Urine Bottle for Male Infants.*
10. HORNUNG, D. *The Treatment of Chilblain with Hot Air.*
11. SCHULTZE, W. H. *Remarks on the Differential Diagnosis of the Pathogenic Streptococci.*
12. PFAUNDLER, M. *The Treatment of Congenital Lack of Resistance.* (Concluded.)
13. JESIONEK, A. *An Historical Retrospect of the Progress in Medicine in the University of Giessen during the Last Two Hundred Years.*

1. Rolly reviews the clinical manifestations of genito-urinary tuberculosis: in 60% of the cases the first symptoms were referable to the bladder; in 20% the first sign was pain in the region of the kidneys; in 10% hematuria, with or without colicky pain, first drew attention to the condition. The infection may be ascending or descending, probably the former is the most common, *i.e.*, infection of bladder, or of testicle, then bladder and later ureter and kidneys. In every case of genito-urinary disease, in which the etiology is not immediately clear, one should think of tuberculosis. The presence of tuberculosis in this region can be diagnosed, however, only by the demonstration of tubercle bacilli in the urine. Here arises another difficulty, on account of the great similarity between the tubercle bacillus and the acid-fast smegma bacillus. Rolly has carried out a large series of comparative experiments with smegma and tubercle bacilli, and claims that it is impossible to differentiate the one from the other by any known staining reaction, nor are the morphological differences marked enough to warrant a diagnosis. With differentiation by cultures, also, he has had little success. With animal inoculation, however, he has been able, in every case, to differentiate clearly. The smegma bacillus never causes pathologic changes in the guinea pig, whereas the tubercle bacillus always brings about definite lesions. This is, therefore, the means by which a diagnosis of genito-urinary tuberculosis may be definitely made. The author has also examined a large number of advanced phthisis patients, without genito-urinary tuberculosis, without ever being able to demonstrate tubercle bacilli in the urine.

3. Seel reviews the chemistry of the combinations of phenol with the potassium phenol salts, as well as those of cresol with potassium cresol salts. They are not simple phenolates nor cresolates, but a double combination of three molecules of phenol (or cresol) with one molecule of potassium phenolate (or cresolate). The bactericidal power of these combinations is the same as that of phenol or cresol. The main advantage lies in the crystalline form, which makes it possible to use them in tablets of known strength.

6. Loehlein reports the case of a man of fifty-eight, with advanced chronic contracted kidneys. At autopsy an abscess, unsuspected before death, was found in the right temporal lobe of the brain. It contained thick greenish-yellow pus. Over it the pia was injected, but no exudate was demonstrable; deeper in the temporal lobe a second smaller focus similar to the first was found. Examination of the pus revealed the presence of large numbers of streptothrix, which in cultures and animal inoculation showed all the characteristics of the streptothrix Eppingeri, described by Eppinger in connection with abscess of the brain. The most careful examination showed no source of infection, either from ear, lungs or elsewhere; the abscess was apparently primary in the brain substance. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 29. JULY 22, 1907.

1. *PLACZEK, S., AND KRAUSE, F. *A Case of Circumscribed Arachnitis Adhesiva Cerebralis.*
2. *PEISER, J. *The Habitual Vomiting of Nursing Infants.*
3. LEWANDOWSKY, M. *Apraxia in Movements of the Eyelids.*
4. FUNCK, C. *The Biology of Pernicious Blood Diseases and of Malignant Cell-Elements.*
5. NEUMANN, H. *Metacresolanytol in the Treatment of Erysipelas.*
6. *MOSES, F. *The Present Position of the Atoxyl Treatment of Syphilis.*

1. Placzek and Krause give the clinical history and operation findings of a most interesting case. The patient, a woman of twenty-five, with good family and previous history, began to suffer from vomiting and unsteadiness in gait. When seen she complained of headache, double vision, dizziness and repeated vomiting. There was a complete paralysis of the right facial nerve, without reaction of degeneration; slight ptosis of left eyelid was noted. The movements of the right eye were lost but for a slight movement upward and downward. The left eye could only be moved very slightly outward, and a slight nystagmus was also present on this side. Retinæ were normal, also optic nerves were both normal. The gait was staggering, the patient falling now and then to the left side. Standing with eyes open, the patient swayed to a marked degree. On these findings a diagnosis of tumor in the posterior fossa was made. Against actual cerebellar tumor was the absence of optic neuritis, and of stiffness of the neck. At operation, towards the median line, below the cerebellar hemisphere, was found a tense bladder-like cyst, the walls of which were composed of normal arachnoidea. The cyst was emptied of a large amount of clear fluid. Puncture of the ventricles gave no increase of fluid. The patient made a long, slow convalescence, complicated by sudden and severe attacks of fever between 103° and 105°, lasting from one to three days, and separated one from the other by afebrile periods of from five days to two weeks, without localizing symptoms of any kind, and without symptoms suggestive of sepsis. These febrile periods disappeared after four months and the patient recovered completely. All other causes of fever having been carefully ruled out, the authors conclude that in this case the febrile periods were of cerebral origin and due to the manipulation of the region of the medulla, necessary at the operation.

2. Peiser recognizes three forms of habitual vomiting in infants. The first occurs in healthy appearing babies who receive too much food at one feeding, or are fed too often, or the milk is too rich in fat. These cases are easily controlled by regulating the amount and the number of feedings, or by cutting down the fats. A second form occurs in children who though apparently well nourished are of nervous temperament, awake easily, cry much and are easily irritated. Here the vomiting occurs from two to four hours after feeding, when normally the stomach should be empty. Often in this class of cases laryngismus stridulus or tetany occurs. In certain families with marked neurasthenic tendency, all the children are subject to this form of habitual vomiting, which is extremely resistant to treatment and finally disappears spontaneously. The author considers this form to be due to a pyloric spasm, more easily excited in such highly strung children.

The third form occurs in badly nourished weak infants, and is more a regurgitation than an actual vomiting. In observations on such children with the x-ray, the stomach was dilated and the period of gastric digestion prolonged. The vomiting in this latter class of cases takes place three or four hours after feeding. The cause is probably a weakness of the musculature of the stomach and particularly of the cardiac orifice, which allows of a regurgitation of food. The treatment of this third form is general, and not until the general condition of the child is normal will the regurgitation disappear.

6. Moses reviews the success of the treatment of syphilis by atoxyl as published up to date. With but few exceptions each observer has been able to report certain cases of syphilis which have done well under atoxyl, but the consensus of opinion is that its efficiency is not nearly so high as that of mercury and iodides. In a series of 19 cases of syphilis treated with atoxyl by the author 5 were cured, and 7 improved greatly under the treatment. Toxic symptoms referable to atoxyl were diarrhea in 7, albumin in the urine in 3, albumin with casts in 1 case. Disturbances of sight were noticed in none of the cases. The injections were accompanied by no local reaction, and were painless. Moses concludes that in all cases where for any reason mercury cannot be borne or is contra-indicated, atoxyl should be tried. The dosage should be carefully regulated, never more than 3.5 gm. (gr. lii) in all. Atoxyl is by no means so harmless a drug as has been claimed.

[R. D.]

DIE THERAPIE DER GEGENWART.
AUGUST, 1907.

1. KLAPP, R. *Narcosis with Artificially Diminished Circulation.*
2. *BRUGSCH, T., AND SCHITTENHELM, A. *Gout, its Origin and Treatment.*
3. CURSCHMANN, H. *Artificial Increase in Pressure of the Cerebrospinal Fluid as an Aid in Lumbar Puncture.*
4. HIRSCHFELD, H. *The Prognosis of Pernicious Anemia.*
5. KOHNSTAMM, O. *Hypnotic Treatment of Disordered Menstruation.*

2. The weightiest factor in gout is the "uricemia," first noted by Garrod. The source of the uric acid in the body is the purin bases, derived in turn from the breaking up of nuclein and nucleic acid by the action of ferments. In man the source of uric acid in the urine is twofold: (1) endogenous, from the breaking down of the nuclei of cells in the body and (2) exogenous, from the diet. The question of uric acid content of the blood also depends upon the above factors, and it has been found in a series of observations on patients with gout, who were kept for months on a purin-free diet, that there was a constant though small amount of uric acid in the blood. From this it is fair to suppose that in gout there is a disturbance of endogenous uric acid metabolism as well as of the exogenous. Three possible causes of increased uric acid content of the blood are: (1) diminished excretion, (2) diminished uricolysis, (3) increased uric acid production. The authors find that the real factors are a diminished uricolysis through diminished fermentative action. They find also an increase in the excretory period for exogenous uric acid; in other words, we have an anomalous condition of the entire nuclein metabolism. In a gouty person, the increase of nucleins in the diet will precipitate an acute attack. It has been found that the addition of HCl to a saturated watery solution of uric acid will lower the solubility, and sodium salts have the same effect on a saturated watery solution of monosodium urate. Working along these lines Loghem injected uric acid, subcutaneously, into rabbits, and found that the deposit of urates in the tissue could be prevented by large doses of HCl, which lowered the sodium content of the body fluids. By giving sodium bicarbonate, instead of HCl, the deposit was hastened and increased. Other observers have carried out the same experiments with like results. These observations show that the early alkali treatment of gout was of no value, and probably increased the severity of the attack, and also that Falkenstein's empirical observation that gouty persons improved under the use of HCl had a physiological basis. The authors consider HCl of greatest value in the treatment of gout. As in diabetes the metabolism of sugars is upset, so in gout the nuclein metabolism is impaired. We must therefore regulate the diet, so that it shall be purin-free, and continue so over long periods, to be regulated by the severity and frequency of the acute attacks. This does not mean a pure vegetable diet, by any means, as the alkali of the vegetables will precipitate acute attacks. First in importance in the diet of gout, are carbohydrates, in the form of cereals, and then fats. Albumin is allowed, so long it is not meat albumin. Vegetables and fruits should be given with care. The diet must not be too rich in salt. The patient should receive 20 or 30 drops of dilute HCl three times a day. Much exercise is to be recommended, as it has been shown that exercise has a direct effect on the nuclein metabolism. The authors have seen no good results in "washing out" the uric acid with alkaline waters; also little can be said in favor of the drugs which are given as solvents of uric acid (piperazin, etc.). The drinking of large quantities of plain water is to be recommended. It must be remembered that régime in all things is as important in gout as in diabetes and nephritis.

[R. D.]

ZEITSCHRIFT FÜR KLINISCHE MEDIZIN. BD. 62.
(Concluded. See BOSTON MEDICAL AND SURGICAL JOURNAL, Sept. 12, 1907, p. 380.)

12. *MANNABERG, J. *Intermittent Fever in Visceral Syphilis, Especially Syphilis of the Liver.*
13. *KOBLER, G. *Severe Intestinal Disturbances Caused by Malaria.*
14. RÉTHI, L *Headache of Nasal Origin.*
15. BAUMGARTEN, E. *Multiple Papillomata of the Larynx.*
16. SENDZIAK, J. *The Diagnosis and Treatment of Laryngeal Carcinoma.*
17. GLEITSMANN, J. W. *A Contribution to the History of Laryngology in the United States since the Introduction of the Laryngoscope.*
18. KIENBOCK, R. *A Case of Diaphragmatic Hernia with X-ray Examination.*
19. *HELLY, K. *So-called Atypical Cases in Hematology.*
20. *LEINER, K. *Palpable and Movable Kidneys in Babies.*
21. MUCHA, V. *The Bacterial Flora of the Mouth.*
22. *REITTER, K. *Renal Tuberculosis and Arterial Hypotension.*
23. *BAUER, F. *The Relations of Blood Pressure to Tuberculin Injections.*
24. *MINKOWSKI, O. *Esophageal Cardiograms in Cardiac Arrythmia.*
25. HEYMANN, P., AND MEYER, A. *The Etiology of Edema of the Larynx.*
26. ONODI, A. *Spontaneous Healing of Empyema of the Antrum of Highmore and the Value of Endonasal Irrigation.*
27. STERNBERG, M. *Skoda's Terminology of Cardiac Action: An Historical Study.*
28. *v. WEISMAYR, A. R. *Pleomorphism of the Tubercle Bacillus.*
29. WEIL, M. *A Case of Cavernous Lymphangioma of the Posterior Wall of the Pharynx.*
30. *LANDSTEINER, K. *Squamous Cell Carcinoma and Sarcoma of the Biliary Tract in a Case of Cholelithiasis.*
31. REINHARD, P. *The Relation between Diseases of the Nose and the Eye.*
32. *ALEXANDER, G. *Tumors of the Acoustic Nerve.*
33. WEINBERGER, M. *The Diagnosis and Clinical Course of Mycotic Embolic Aneurisms, Rupture of Blood Vessels, and Influenzal Endocarditis.*
34. *WEISS, H. *The Diagnosis of Slow Obstruction of the Pulmonary Arteries.*
35. LÖWY, H. *Glandular and Other Cysts in Nasal Polypi.*
36. *v. SCHRÖTTER, H. *The Diagnosis of Tumors of the Lung; Bronchogenic Carcinoma with Glycogen Formation; with Remarks on its Histogenesis.*

12. The possibility of the existence of an intermittent fever, in form entirely similar to that of malaria, but the result of visceral syphilis, is but little recognized and the

condition is one that might readily escape diagnosis, and, what is more important, fail to get appropriate therapy. Mannaberg reports several of these cases, which under treatment with mercury and iodide rapidly recovered, with decrease in size of the liver.

13. Kobler has observed cases which present a picture suggestive of Asiatic cholera, with marked gastric and intestinal disturbances, in which examination of the blood reveals a malarial infection. Quinine cures these cases. In regions where cholera is to be expected, such cases may be incorrectly diagnosed as cholera and a useless quarantine be established. Consequently, the possibility of malaria with intestinal manifestations is to be borne in mind.

19. The more exact hematologic studies of recent years have revealed many cases presenting variations from the common types. Helly believes such cases should be reported in detail, in order that later data may be at hand for a proper classification of the blood diseases. At present a satisfactory grouping is not possible. He describes a case presenting many of the characteristics of pernicious anemia, combined with those of cirrhosis of the liver. A peculiarity of the post-mortem findings was the occurrence in the bone marrow of many foci composed of cells resembling lymphocytes. [The reviewer believes it is important to record such cases, but more minute hematologic study during life than was given these cases is necessary before such data will be of much aid in making a final satisfactory classification.]

20. According to Leiner, in infants the kidneys can be paipated very frequently, especially if there is emaciation, and often the kidneys are slightly movable. Such, however, is not to be regarded as a pathological condition. A true wandering kidney (a pathological condition) is very rare in infants.

22. See "Progress in Theory and Practice of Medicine"; blood pressure, Boston Medical and Surgical Journal, 1907, clvii, p. 222.)

23. See same.

24. An understanding of cardiac arrythmia has received great assistance from the graphic method of simultaneously studying the radial pulse, cardiac impulse and venous pulsations by means of tracings made with receiving and recording tambours. In many cases, however, there is no palpable apex impulse or visible venous pulsation in the neck. In such cases Minkowski has given us a method which consists of a graphic record of the pulsations of the left auricle, made by means of a stomach tube in the esophagus. The pulsations of the left auricle are transmitted through the anterior wall of the esophagus. With an inflated membrane in the esophagus connected with the opening in a stomach tube, such pulsations can be transmitted and recorded on a revolving drum. These can be compared with ventricular pulsations recorded at the apex, or in peripheral arteries. The present paper, by means of several cases, shows the applicability and usefulness of the method. Also its limitations are touched upon.

28. Weismayr describes a case of pulmonary tuberculosis, in whose sputum there were thread-like and branching forms of tubercle bacilli during a period of eight days. Many other examinations during a period of two years showed only the ordinary forms. Pleomorphic forms occur in old cultures and under certain artificial conditions, but they are uncommon in sputum.

30. A case report. The squamous cell carcinoma was confined to the mucosa of the gall bladder. The sarcoma was of the myosarcoma type and metastasized in the liver. In the metastases there were osteoid areas.

32. A report of two cases with a careful study of the changes produced in the structure of the ear.

34. The most remarkable thing about this case, reported by Weiss, is the very great extent of lung whose blood supply had been gradually cut off by thrombosis, without producing any very severe symptoms. The diagnostic point of most importance in obstruction of pulmonary arteries is the sudden appearance of a systolic murmur heard in the second and third interspaces near the sternal margin and accompanied by clear valvular heart sounds.

36. H. v. Schrötter gives a very careful clinical and pathological study of a case of bronchial carcinoma. In the former he emphasizes the importance of bronchoscopy and x-ray examination as means of accurate early diagnosis. The tumor in this case he believes to have originated in a large bronchus and extended into the lung. The cells were particularly rich in glycogen. The tumor was of the flat cell type. [H. A. C.]

Revue de Chirurgie.
August, 1907.

1. Estor, E. *Congenital Dislocation of the Wrist.* (Continued.)
2. Gayet, G. *Note on a Mixed Tumor of the Cheek.*
3. *Mally. *The Present Status of Phototherapy.*
4. Pichon, R. *Hernia of Muscles.* (*Myocèles.*) (Continued article.)
5. *Baumgartner, A., and Huquier, A. *Subastragaloid Dislocation of the Foot.*

3. Mally calls attention to the great success of the Finsen light in the treatment of lupus. He does not agree with the view, however, which explains this therapeutic action by assuming a bactericidal power for the light. On the contrary, he feels that we have here to do with a counterirritant, acting in the same way as scarification, or the application of chemicals, but having the remarkable quality of causing neither pain nor intolerance. The great value of phototherapy lies in the fact that it is painless. Cases of lupus should be exposed daily, for an hour or more, to the action of the light, over a period of about five or six months. This is followed by a suspension of all treatments for about the same period, at the end of which they are resumed. The average case is cured at the end of this second period of treatment.

5. Subastragaloid dislocation of the foot, if recent and uncomplicated, should be reduced immediately after the accident. Lateral dislocations are reduced by abduction for internal dislocation, or adduction for external, at the same time pushing the head of the astragalus backward. A second form of lateral dislocation can only be reduced after having first placed the foot in forced flexion on the leg. Antero-posterior dislocations are to be reduced by downward traction of the foot as a whole, in the long axis of the leg, followed by pushing the foot either forward or backward. Recent irreducible dislocations, without external wound, should be treated by arthrotomy and removal of whatever hinders reduction. It may be necessary to remove the head of the astragalus before reposition of the body of the bone can be accomplished. Occasionally, even this does not suffice, in which case the astragalus must be removed as a whole. Compound, infected dislocations should be immediately treated by astragalectomy and drainage. The authors give the results of 23 astragalectomies as follows: (1) Good functional result in 13; (2) ankylosis in 6; (3) secondary amputation in 1; (4) death from infection in 2; and (5) one case untraced.

[W. C. Q.]

Miscellany.

THE MASSACHUSETTS MEDICAL SOCIETY.

MEETING OF THE COUNCIL.

A stated meeting of the Council was held in the Medical Library, Boston, on Wednesday, Oct. 2, 1907.

The meeting was called to order at 12 noon by the president, Dr. G. W. Gay. Eighty councilors were present.

Delegates to the meetings of other state medical societies were appointed as follows: Vermont, Drs. C. K. Cutter, of Somerville, H. G. Stetson, of Greenfield; New York, Drs. H. F. Vickery, of Boston, Henry Colt, of Pittsfield.

On motion of Dr. Wheatley it was voted that

a committee of three, of which the president of the society shall be one, be appointed to consider and report at the next meeting of the Council what action, if any, it will recommend the Society to take in regard to defending its members in suits for malpractice.

The following were appointed to constitute the committee: Drs. G. W. Gay, F. G. Wheatley, C. H. Cook.

Attention was called to the request of the American Medical Association that the Society take action regarding the establishment of branch associations of the American Medical Association, the North Atlantic branch to consist of the State Medical societies of the New England states and of New York and New Jersey.

Voted, to refer the matter to the Committee on State and National Legislation to report thereon at the next meeting of the Council.

Correspondence.

LETTER FROM PARIS.

[From our Special Correspondent.]

RECENT PAPERS FROM PROFESSOR CHANTEMESSE..

PARIS, Sept. 13, 1907.

Mr. Editor: The early summer months were marked this year in Paris by the appearance of an unusual series of interesting medical papers, of which I shall endeavor to give you the gist in these fall letters.

The most important one, Calmette's ophthalmo-reaction to tuberculin, I dealt with in my letter of a fortnight ago. To-day I shall consider two communications from Professor Chantemesse, one of the less-known members of the Paris Faculty, but a hard worker for all that. As one of these papers is a direct outcome of Calmette's experiments, we can suitably take it up first.

THE OPHTHALMO-REACTION TO THE TYPHOID TOXIN.

Chantemesse, as you probably have heard, is the author of a serum for the treatment of typhoid fever. This serum he has now employed for a number of years, and according to a statistical table published in 1904, it has in his hands given the following results: Whereas during a period of four and three quarters years in the fourteen largest general hospitals of Paris there were 3,595 cases of typhoid fever, with 753 deaths, an average rate of 17.3%, in Chantemesse's wards and for the same length of time (April 1, 1901, to Jan. 1, 1906) there were 712 cases, with 27 deaths, an average rate of 3.7%. This is a truly remarkable showing, when we bear in mind the length of the period it concerns, the fact that these are hospital patients and the efficiency of the Paris hospital nurse.

But there appears to be something mysterious about this serum, which would seem to be confined to the practice of Chantemesse and about three other physicians. If it really is efficacious, and certainly these figures indicate that it is, how comes it that the serum is not prepared for the profession at large and used by them, in so common and serious a disorder as typhoid fever?

Well, Chantemesse has been trying to adapt the ophthalmo-reaction method to typhoid fever, and the idea is an interesting one and may lead to developments. It is self-evident that in importance it is not to be mentioned in the same day with Calmette's affair, the early and visible diagnosis of a case of typhoid not being often a matter of any great moment — you have only to wait and you will find out all right! Still, curiously enough, it might be of considerable use to us physicians whose practice consists of traveling Americans. We are frequently called on to see patients just sailing for home, but presenting a doubtful condition, — headache, slight rise of temperature, furred tongue and constipation, a state of affairs having existed already for several days. The question that then arises is whether the case is merely one due to much traveling and will yield to starvation and laxatives, or whether it is one of incipient typhoid, and the patient ought to be advised to give up sailing by a certain steamer, often a serious matter, especially at this time of year. In such instances a means of early diagnosis, otherwise I believe impossible, would unquestionably be of value.

Anyhow, Chantemesse proceeds just as Calmette does. He takes a strong solution of typhoid toxin, precipitates it by means of pure alcohol, and obtains a powder, which, at the dose of 1-50 mgm., dissolved in a drop of water and instilled in the eye, gives in suitable cases an ophthalmo-reaction just like Calmette's, and with all its characters, — rapidity, harmlessness, brief redness when no typhoid is present, more serious and prolonged reaction in positive cases, etc. The only troublesome point will be how to have the preparation always at our disposal!

However interesting these facts may be on purely scientific grounds, and as an example of what may prove to be a general law of pathology, it is difficult to believe that the method is destined to turn out to be of much value to the practising physician, unless in very exceptional instances.

ON THE PROPHYLAXIS AND TREATMENT OF PERITONEAL INFECTION AFTER TYPHOID PERFORATION, BY MEANS OF THE HYPERLEUCOCYTOSIS INDUCED BY HYPODERMIC INJECTIONS OF SODIUM NUCLEINATE.

This is the title of Professor Chantemesse's second paper, in which he begins by recalling the fact that the gravest danger to which typhoid patients are exposed is peritonitis following on perforation; the frequency of which accident, in a compilation of about 20,000 cases, he finds to be 2½%.

This complication, when abandoned to itself, is almost invariably fatal. It can only be cured by a surgical intervention, and this intervention must furthermore be immediate. Physicians and surgeons of all countries agree that after a lapse of eight or ten hours from the occurrence of perforation the patient's chance, even from surgery, is hopeless; the perforation can be closed, but the evolution of the peritoneal inflammation, to which it has given rise, will continue to a fatal issue.

The problem then is to diagnose perforation as soon as it occurs; are there signs that render this possible?

Going over the symptoms that have been described, Chantemesse observes that none of them is at all characteristic of actual perforation; they are all dependent on the peritoneal reaction the perforation has occasioned, and, as mentioned above, when peritoneal infection has once got under way, the time for intervention is past. In addition to this, the symptoms of peritoneal reaction may also be due to peritonitis by propagation, without perforation; or, they may either be very slight or be altogether wanting, at the early stage of a very small perforation.

The quandary then of the practitioner and his moral responsibility are very great; imperative necessity for certainty in diagnosis, a serious surgical intervention being the outcome; and no means of attaining this end!

In presence of this grave *impasse* Chantemesse has made an interesting attempt to at least improve the situation *by increasing the patient's power of resistance to peritoneal infection;* and he raises the question whether we may not be able to prevent, check, or at least moderate this peritoneal inflammation, to oblige it to develop less rapidly, to put the patient in a better posture against it, and to bring about a state of affairs such that the surgeon on opening the abdomen will find the serous membrane in a condition of vigorous defensive reaction.

Typhoid intestinal perforation, left to itself, carries off the patient in from two to five days; Chantemesse thinks that by inducing hyperleucocytosis in the blood and peritoneum by means of hypodermic injections of sodium nucleinate, the patient's resistance to peritoneal infection may be made to extend over a period of *ten* days or more, so as possibly, in some few cases, to admit of spontaneous recovery when the perforation is small and placed in such a way as to allow the omentum to obliterate it.

The human system defends itself against the invasion of germs by the natural function known as phagocytosis;

it is very probable that a number of remedies, whose efficacy has stood the test of time, such as quinine in malaria, antitoxin in diphtheria, collargol in pneumonia, act largely by the hyperleucocytosis they induce.

Now there is among the therapeutic agents that produce hyperleucocytosis, one, nuclein, that has attracted Chantemesse's attention, and which he has employed in sterile hypodermic injections of a 1% solution in artificial serum. Six to eight hours after such an injection, hyperleucocytosis of a mononuclear type is observed; this increases during about forty-eight hours, and then gradually disappears in four or five days. The increase in white globules is very considerable, their number doubling, or even more.

When a dose of 1 cg. is injected *into the vein* of an arm, the patient feels in two or three hours slight rigors, soon followed by a rise of temperature to 104°. This aseptic pyrexia, a defensive process, is of short duration, is accompanied by very manifest leucocytosis, and ends in the space of a few hours.

The preferable way of giving the remedy is *subcutaneously*. Forty centigrams of sodium nucleinate dissolved in 40 cc. of sterile normal saline solution and administered in one or two injections beneath the skin of the abdomen or external aspect of the thigh, produce in a few hours a slight degree of local pain. In twenty-four hours the region sometimes swells slightly and reddens, which signs all disappear in another twenty-four hours. Two or three days later a second injection can be given, and again a third, lessening the dose each time; hyperleucocytosis is in this way maintained and favors the system in the struggle in which it is engaged.

The opsonic index, or stimulating power of the patient's serum as regards his leucocytes, can be measured before and after each injection. In a case of intestinal perforation treated by sodium nucleinate, Chantemesse made this calculation, and found that in twenty-four hours the opsonic index passed from 1.60 to 2.50, while the peritoneal inflammation was found to have manifestly receded.

From a clinical point of view, here are the results of Chantemesse's observations: he has had several typhoid patients who, after intestinal hemorrhage, experienced severe pain in the abdomen, with reaction, muscular defense and disappearance of liver dullness. An injection of nucleinate, given as soon as possible after the appearance of pain, removed it almost completely in twenty-four hours; the day after the injection the abdomen was puffed up, but not painful, resisted palpation, and in some cases conveyed the impression of swollen and immobilized intestinal loops, as is seen in tubercular peritonitis. By repeating the nucleinate injections two or three days later, the peritoneal symptoms all gradually disappeared.

It is, of course, venturesome to claim that these were cases of small intestinal perforation. Still, the following instances that ended fatally seem to throw considerable light on the question.

In two cases, with large intestinal perforation seen at post-mortem, the patients who were not operated on lived *twelve days* after the perforation occurred, thanks to two or three nucleinate injections. And even in these cases the injections were not made at the beginning, but fifteen to eighteen hours later, when the classical signs of peritonitis by perforation were already present. Twenty-four hours after the injections, the patient's situation had noticeably improved to such an extent than an operation could have been undertaken with hopes of success; but this they declined. And when they died, at the end of twelve days, from slow peritonitis, having produced abdominal retraction, the peritoneum was found in a state of systematic defence, the perforations themselves, in spite of their size, being fairly well obliterated by the omentum and organized connective tissue.

By the side of the advantages connected with this powerful therapeutic agent, we must place its drawbacks.

The local pain has been already mentioned. In addition to this the sodium nucleinate puts the system to some strain. It produces in a short time, and in proportion to dose, a rise of temperature and general distress, which although lasting but a few hours, are not specially advantageous to a sick person.

In the case of a healthy person, about to undergo laparotomy the following day, an injection of 40 cg. will prepare the peritoneum admirably for possible operative infection, and without appreciable inconvenience to the patient. This would, however, no longer hold true, if with a very ill patient the operation and injection were to be carried out simultaneously, for then the double shock would be cumulative.

The difference between the action of intravenous injections of collargol in infectious disorders and the hypodermic use of sodium nucleinate appears to be solely one of *degree*, largely in favor of the latter.

The conclusions that Chantemesse has drawn are the following: sodium nucleinate seems to act by a temporary though quite prolonged increase of the phagocytic function; its effects are very marked, and its dose must be adapted to each individual case.

As a preventive it is an energetic remedy against infection. When infection already exists, the nucleinate is useful if applied at the beginning of this complication. Its benefit can be guaged by the degree of defensive reaction it induces, provided the patient be in a state to supply and stand a vigorous reaction.

The hyperleucocytosis it gives rise to is particularly useful in preventing or moderating the evolution of a case of peritonitis starting in the organs covered by that serous membrane, whether spontaneous or surgical. Even if it does not cure acute peritonitis, it increases the chance for a successful outcome to a consecutive surgical intervention.

"SPECTATOR."

TUBERCULOSIS AT THE LONG ISLAND HOSPITAL.

BOSTON, Oct. 6, 1907.

Mr. Editor: In the "Medical Notes" of last week was a statement regarding tuberculosis at Long Island Hospital, with a call on the trustees of the Consumptives' Hospital to do something to relieve the congestion there.

It seemed in reading the Note as though your reporter must have written the same in a hurry, and without much consideration of the facts in the case.

There is, consequent to the campaign of education that has been going on for years, a decided demand for beds in which tubercular patients may be cared for, but outside of the Long Island Hospital, the city has only been able to provide a few additional beds, mostly in the Holy Ghost Hospital in Cambridge. The trustees of the new Consumptives' Hospital are working as rapidly as possible to get their building started. But under the existing economic conditions they will be able to provide only a small part of the needed beds, and that not at once. Certainly, the Board of Trustees of Pauper Institutions must be prepared to care for all poor people presenting themselves, whatever the pathological condition with which they may be suffering. Consequently, it would seem as though a careful consideration of the field would show them that the Long Island Hospital must be prepared to treat in a proper manner many tuberculous patients for a long time to come, and that they must make arrangements so to do. Meantime the other board will doubtless do all in its power to build as large a hospital as possible for tuberculosis patients.

Very respectfully yours,
A. K. STONE, M.D.

[Dr. Stone has apparently read into our notice of tuberculosis at the Long Island Hospital a meaning which it was not our desire to convey. It is true that this hospital is overcrowded with tuberculous patients to the detriment of those suffering from other diseases, and it is no less true that it is desirable for the Consumptives' Hospital trustees to take as early measures as possible to provide for this class of cases unless separate buildings can be provided at Long Island. We recognize perfectly the duty of the Long Island Hopital in respect to tuberculosis, but the fact must not be lost sight of that if tuberculous patients are to be treated there, they must be properly provided for, both in their own interest and in that of patients suffering from other diseases. The present situation is altogether unfortunate. — ED.]

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPT. 28, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,365	524	Quincy	9	4
Chicago	—	—	Waltham	11	2
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	3	1
Baltimore	169	51	Brookline	4	1
Cleveland	—	—	North Adams	7	2
Buffalo	—	—	Chicopee	3	4
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	3	2
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Leominster	4	3
Providence	65	23	Hyde Park	5	2
Boston	200	71	Melrose	—	—
Worcester	44	17	Newburyport	—	—
Fall River	52	29	Woburn	3	1
Cambridge	23	12	Marlboro	6	1
Lowell	39	21	Westfield	6	4
Lynn	23	6	Peabody	—	—
New Bedford	32	20	Revere	3	1
Springfield	27	8	Attleboro	1	—
Lawrence	20	10	Clinton	1	1
Somerville	19	5	Adams	1	1
Holyoke	27	15	Gardner	3	2
Brockton	7	1	Milford	—	—
Malden	8	4	Watertown	3	2
Chelsea	19	5	Plymouth	—	—
Salem	15	6	Weymouth	2	1
Newton	9	3	Framingham	4	1
Haverhill	15	2	Southbridge	2	—
Fitchburg	—	—	Wakefield	—	—
Everett	7	1	Webster	—	—
Taunton	—	—			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING OCT. 5, 1907.

L. H. WHEELER, assistant surgeon. Detached from the "Raleigh," when placed out of commission, and ordered home to await orders.

G. L. WICKES, assistant surgeon. Detached from the "Cincinnati," when placed out of commission, and ordered home to await orders.

B. H. DORSEY, passed assistant surgeon. Ordered to the "Washington."

M. K. JOHNSON, surgeon. Detached from the Naval Training Station, Charleston, S. C., and ordered to the Naval Training Station, Newport, R. I.

H. A. DUNN, passed assistant surgeon. Ordered to additional duty with Naval Recruiting Party No. 2.

H. W. COLE, JR., assistant surgeon. Orders to the Naval Training Station, Newport, R. I., revoked; detached from the "Alabama" and ordered to the Naval Training Station, Charleston, S. C., Oct. 6.

A. B. CLIFFORD, assistant surgeon. Ordered to duty at the Naval Medical School Hospital, Washington, D. C.

E. L. JONES, assistant surgeon. Detached from the "Milwaukee" and ordered to the "Maryland."

The following officers have been ordered to the Naval Medical School, Washington, D. C., for course of instruction: Assistant Surgeons A. B. HAYWARD, G. D. HALE and J. T. MILLER.

APPOINTMENTS.

DR. PHILIP COOMBS KNAPP has been appointed Clinical Instructor in Diseases of the Nervous System at the Harvard Medical School for a term of three years.

DR. ROBERT BATTEY GREENOUGH has been appointed Instructor in Surgery at the Harvard Medical School for a term of three years.

DR. H. M. SWIFT has been appointed Assistant Neurologist at the Long Island Hospital, Boston.

SOCIETY NOTICE.

LECTURES BEFORE THE HARVEY SOCIETY, WINTER OF 1907–08.—The program of the Harvey Society course of lectures for the coming year is as follows:

Oct. 26, 1907. Prof. E. O. Jordan, University of Chicago, "The Problems of Sanitation." Nov. 16. Prof. James Ewing, Cornell University, "Etiology of Tumors." Nov. 30. Prof. D. L. Edsall, University of Pennsylvania, "The Bearing of Metabolism Studies on Clinical Medicine." Jan. 11, 1908. Prof. Ernest H. Starling, University of London, "The Chemical Control of the Body." Jan. 25. Prof. George W. Crile, Western Reserve University, "Shock." Feb. 8. Prof. Joseph Jastrow, University of Wisconsin, "Subconsciousness." Feb. 22. Prof. Otto Folin, Harvard University, "Problems of Chemistry in Hospital Practice." March 7. Prof. Ross G. Harrison, Yale University, "Embryonic Transplantation and the Development of the Nervous System." April 11. Prof. E. A. Schäfer, University of Edinburgh, "Artificial Respiration in Man." The lectures are given under the patronage of the New York Academy of Medicine and are held at the Academy Building, 17 West 43d Street, on Saturday evenings at 8.30 o'clock. They are intended for the medical profession and all interested are cordially invited to attend them.

RECENT DEATH.

ALFRED HENRY GOULD, M.D., M.M.S.S., died in Boston, Oct. 2, 1907, aged thirty-four years.

BOOKS AND PAMPHLETS RECEIVED.

Trypanosomes and Trypanosomiases. By A. Laveran and F. Mesnil. Translated and much enlarged by David Nabarro, M.D., B.Sc., D.P.H., London. Illustrated. Chicago: W. T. Keener & Co. 1907.

A Directory of the Charitable and Beneficent Organizations of Boston, together with Legal Suggestions, Laws Applying to Dwellings, etc. Compiled by The Associated Charities of Boston. Fifth edition. Boston: The Old Corner Bookstore, Inc. 1907.

Year Book of the Medical Association of the Greater City of New York. 1907.

University of California Publications in Physiology. The Chemical Character of the Process of Fertilization and Its Bearing upon the Theory of Life Phenomena. By Jacques Loeb.

How to Cure Spleens for Food. By Edward T. Williams, M.D.

Harmful Involution of the Appendix. By Robert T. Morris, M.D. Reprint.

Heart Clots in Pneumonia. By Beverley Robinson, M.D. Reprint.

United States Department of Agriculture. Bureau of Plant Industry. Bulletin No. 112. The Use of Suprarenal Glands in the Physiological Testing of Drug Plants. By Albert C. Crawford. Washington. 1907.

Yellow Fever Institute Bulletin No. 16. Yellow Fever Etiology, Symptoms and Diagnosis. By Joseph Goldberger. Washington. 1907.

Public Health and Marine-Hospital Service of the United States. Hygienic Laboratory. Bulletin No. 39. The Antiseptic and Germicidal Properties of Solutions of Formaldehyde and Their Action upon Toxines. By John F. Anderson. Washington. 1907.

Lippincott's New Medical Series. Edited by Francis R. Packard, M.D. Röntgen Rays and Electro-therapeutics. With chapters on Radium and Phototherapy. By Mihran Krikor Kassabian, M.D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1907.

Practical Diagnosis. The Use of Symptoms and Physical Signs in the Diagnosis of Disease. By Hobart Amory Hare, M.D., B.Sc. Sixth edition, revised and enlarged. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Fiske Fund Prize Dissertation. No. L. Diet in Typhoid Fever. By John Benjamin Nichols, M.D.

Ueber das spizifisch Menschliche in anatomischer, physiologischer und pathologischer Beziehung. Von Dr. Ludwig Hopf. Stuttgart: Fritz Lehmann. 1907.

Obstetrics. A Text-Book for the Use of Students and Practitioners. By J. Whitridge Williams. Second enlarged and revised edition. Illustrated. New York and London: D. Appleton & Co. 1907.

Diseases of the Genito-urinary Organs and the Kidneys. By Robert Holmes Greene, A.M., M.D., and Harlow Brooks, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

The Differentiation of Black Pigment Found in the Liver, Spleen and Kidneys from Coal Dust or Other Foreign Deposits. By Frederick Gaertner, A.M., M.D., LL.D. Reprint.

The Hand of Iron in the Glove of Rubber. By Robert T. Morris, M.D. Reprint.

Address.

THE PRESIDENT'S ADDRESS TO THE SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS HELD IN NEW YORK, SEPT. 9–14, 1907.

BY JAMES C. WHITE, M.D., BOSTON,
Professor of Dermatology, Emeritus, Harvard University.

My Colleagues from far and near: It is my high duty and privilege to greet you in assembly, to welcome you to this Sixth International Congress of Dermatology, and to all of you, my countrymen and residents of other lands, who had share in placing me in this most honorable office, to offer my sincere thanks.

Many of you are passing through novel experiences; you have been living on the vast tracts of ocean, and have learned how small a part of the world are the spots of earth you call home. You have come to a new and younger land and may be expecting to find much that is strange to you. If you travel far over our vast continent you will indeed see a great diversity in its peoples, immense inland seas, rivers which in size dwarf your own to brooks, enormous chains of towering mountain peaks, lofty cataracts and deep cañons, marvellous basins and geysers, and magnificent forests of ancient and gigantic trees, overtopping even our heaven-aspiring, Babel-like edifices. We trust you will visit them all. But in your friends and colleagues who stand here on the edge of this new world to meet you with open arms and warm hearts, and who will try to make you feel that this magnificent city is another home to you, you will find nothing novel or strange. We are just as yourselves. In no other land could a great congress be held where visitors would find so close a tie of blood kinship in their hosts.

You Germans and Austria-Hungarians will see right around you more of your race than in almost any city of the Fatherland. You from Holland will find in this town they founded representatives of your oldest and purest families still. You Latins will read the names and hear the tongues which will make certain districts seem as if you were at home again. You Frenchmen may live here as in France, eat the dishes of your best chefs, see such masterpieces of modern French art as you will scarcely find at home, and associate with the best old Gallic stock in our many Huguenot families; and in one of our states, founded by your enterprising ancestors, your old names, your old customs still flourishing. And you of the North, repeating the Viking's earliest voyage to the West, will find in our central regions three mighty states, called New Scandinavia, with an imported but dwindling remnant of your old enemy, Lepra. As for you of Great Britain, are not you and we mostly of one and the same motherhood? Shakespeare and Bacon, Alfred and Elizabeth, and hosts of other illustrious names are as much our ancestors and those of our near and dear sister Canada as they are yours, and far more speak here the common mother-tongue than on your own soil.

Here, then, and in the American part of this congress, you will all find representatives of your own nationalities. Moreover, in some of us the solution of that interesting question in ethnology, — What is the outcome of a mixture of these leading races of mankind?

And no doubt some of you have been wondering on your way hither, what sort of physicians, what sort of dermatologists, shall we find in these men of the Western Continent? Some of you, 'tis true, have met some of us in Europe and have, no doubt, read some of our writings; but all of you do not know all of us in this way, and you perhaps do not know us and our literature as well or as generally as we know you and yours. It is one of the most important functions of this international league to promote our mutual acquaintance. Now there are no great differences between us, you will find. I have just alluded to the identity or similarity of stock. How has professional training affected it? I need not speak of our common schools or of the academic departments of our universities. I grant that yours may be a little more thorough, as the influences of ours are more generally diffused. The period of required professional study is longer with you than it has hitherto been with us, but now the best educated young men amongst us do not obtain their degree of Doctor of Medicine before they are twenty-six or twenty-seven years old; and after that may come further study in European schools. We may all alike read the works of the great masters in medicine of all nations. We have at home only too many medical schools; we have one hundred and twenty-five professors and teachers of dermatology. We have large and well equipped special laboratories and clinics, perhaps the largest and most magnificent medical school building in the world, and we have produced some admirable and exhaustive treatises and countless papers on dermatology. Most of our teachers have had the advantage of studying our subject with the most distinguished teachers of Europe, living and dead. You see, therefore, that you should find us very much the same as yourselves, and that we meet as equals, alike prepared to study and discuss the questions and cases which shall be presented for our consideration, and equally desirous of contributing to the advance of our department of medicine. In one point we may indeed find ourselves your inferiors: in our efforts to repay in the same measure the grand hospitality you have so often shown us. But this failure shall not come from any lack of desire or effort on our part.

Permit me to offer you a brief sketch of some of the changes which have taken place in the study and practice of dermatology under the observation of the oldest student among you in the last half century. In 1856 and 1857 I sat in the clinic of Ferdinand Hebra in Vienna, that marvellous training school of future dermatologists. I took with me to Europe a clean slate, for at that time no instruction in skin diseases worth mentioning was given in America, therefore, that terribly iconoclastic feature of his teaching was needless

for his transatlantic hearers. It seemed to me then that this ticket admitted me to an almost perfect system of object-lesson instruction, given by a master of keenest observation, of merciless invective toward the schoolmen of the past, of enthusiasm-inspiring earnestness. No one could fail of learning a great deal under such teaching. I still believe it deserved and still deserves the title unparalleled. We were taught to observe closely what we saw, and to waste no time in attempting to classify the result of such observation under undemonstrable etiological or pathological theories; moreover, to treat lesions by remedies addressed as immediately as possible to them and not to imaginary causes. Treatment, therefore, was purely empirical. We did try to look a little below the surface of the skin, and a limited number of parasitic affections were then recognized. We did take portions of diseased cutaneous tissue, and under Professor Wedl's directions tease them out into shreds under the microscope. We had not then arrived at the knowledge of infinitely attenuated section-cutting, of chemical reactions beyond the solvent power of potash, or of the innumerable, discriminating stains of to-day. No wonder, then, that we failed to recognize the all-present foreign organisms beneath our very eyes. At that period the school of Vienna was at its highest mark, and under such men as Skoda, Rokitansky, Oppolzer, Hyrtle and Sigmund, one had unsurpassed advantages of instruction in other branches of medicine.

Paris was then beginning to lose that supremacy she had so long held undisputed as Vienna rose. There Hardy was giving excellent instruction. Bazin was possessed by his overmastering theories of dartrism, arthritism and the like, and Ricord still reigned as the unrivalled teacher in syphilis. Wilson, with his fluctuating views on etiology and nomenclature, was the sole authority in English-speaking countries. Simon was in Berlin, Veiel, Sen., in Canstatt, Boeck, Sen., in Christiania, and Fuchs had just died in Göttingen. These were our worthy predecessors in dermatology fifty years ago. There were but few professorships and clinics, and no special laboratories. The literature of our subject was scanty. Hebra had as yet published no book but his surpassing Atlas, and there were no journals devoted exclusively to the interests of our department.

In America dermatology was scarcely recognized as a specialty. No systematized instruction in it was given in any school of medicine. There were no special clinics connected with them, and in our hospitals no wards for the treatment of skin diseases. There was hardly a physician exclusively engaged in the practice of this class of affections. All these opportunities for the study and teaching of dermatology had to be created. It has been a long and hard struggle to overcome the opposition on the part of the general profession, the governing boards of hospitals, and the faculties of our medical schools to the position of dermatology as an independent department of medicine. One obstacle has been the unfortunate fact that the universities had no hospitals under their control, no clinical material to offer their appointees. Then, too, our National Government has no share in the direction either of universities or hospitals, so as to regulate or unify medical education. Therefore, this struggle for recognition on the part of your colleagues in the United States had to be made single-handed in every hospital and every institution for medical education. It is not quite yet wholly over, but we may rejoice in great advances. Nearly every one of our one hundred and sixty or more schools of medicine gives special instruction in dermatology, most of our large hospitals make at least provision for out-patients with skin diseases, a few of them have wards for their exclusive care, and all our cities and towns of magnitude have practitioners of this specialty. We have a National Dermatological Association, now thirty years old and numbering sixty associates, a large Dermatological Section in the American Medical Association, and many of our most important cities have local dermatological clubs or societies, all of whose proceedings are published. Then, too, we have long had (under various titles) an *American Journal of Cutaneous Diseases*. There have been published also extensive treatises, cyclopedias, atlases and monographs by American workers. You see, therefore, that we do not stand so far below the standard of activity you, our colleagues from abroad more favored in opportunities, have set for us.

The attention of our American school was first directed to determine what differences might exist between dermatoses here and in Europe, how far, that is, they might vary on account of diversities in climate, racial stock, methods of living, morals, dietaries, etc. For this purpose a careful collection of statistics has been made by members of the American Dermatological Association representing observations made in all parts of the United States and Canada. The number of cases thus collated amounts to more than half a million. Their value is exceptionally great and reliable, because they are founded upon the observation of trained dermatologists. A study of them reveals some striking features: the almost complete absence of some affections common in Europe, the occurrence here of others only by direct importation, a variation in the intensity of certain pathological processes, even an inclination to self-extinction in some of them, and the existence here of certain diseases not occurring elsewhere. In recent years our efforts have been especially directed to the foundation of laboratories devoted to research into the essential nature of skin diseases. The results of such investigations are already of high importance and promise.

The recognition of the importance of such researches has completely changed the method of teaching dermatology amongst us. We are no longer content with those of our former great masters, — the didactic lectures in course, a rapid survey of the whole field of cutaneous medicine, with clinical illustrations, it is true, but scanned mostly afar, and at close view only by the

fortunate holders of the first row of seats or by the most successful rushers of the crowd around the bedside. The medical student at our best schools takes up its study after two or three years' laboratory drill in histology, biological chemistry, pathology, bacteriology and all practical methods of microscopy. He comes thus prepared to apply this knowledge to the proper understanding of the wide pathological panorama which skin diseases present. He makes himself familiar with their clinical features by sight, by touch, in sections, or classes of a few members, three to ten only. He sees what the biopsy reveals of anatomical changes, and what bacteriological researches may discover. He must elucidate the history of cases, and give the grounds for the diagnoses he must present. All this study is carried on in the immediate presence of the instructor, who directs and criticises at every step in the clinic and laboratory. Such is the individual system of teaching dermatology to-day with us. For graduate students greater facilities are furnished, work in special laboratories, and the study of great numbers of clinical cases for eight hours of the day throughout the year under the constant supervision of instructors. Such modern methods of teaching cannot fail of yielding a superior product to those of our student days.

With this brief sketch of the evolution of dermatology in North America during a half century we may well note the changes which the same period has brought to pass in our department everywhere. European schools have risen and declined in popularity with the coming and passing of celebrated teachers. The days of narrowing theories and schoolmen have gone forever, let us hope. In their place we have the marvellous revelations of modern chemistry, physics and the microscope, tangible data for the basis of our etiology and pathology. We may now credibly predict what we are about to discover in both these directions when our knowledge of methods shall have advanced a little farther. We see no bounds to the extent of such discovery. In an address delivered thirty years ago I ventured to predict that I should live to behold with my eyes the cause of pulmonary tuberculosis; of its cutaneous forms we had then no suspicion. We now look backwards upon this memorable event. When our great master of cellular pathology was giving some of you his inspiring instruction, who thought that he might some day come to distant and primitive America to see upon a screen, simultaneously with a thousand other observers, the image of a cell a foot in diameter filled with visible organisms of that scourge of mankind, variola? Even our trained imagination cannot bear us forwards to the limit of such revelation.

When I began the study of skin diseases under Professor Hebra there were upon his tabular list of diseases less than one hundred titles. Since then closer clinical observation, advanced knowledge of their anatomical nature, recent investigations into their etiological relations have individualized and multiplied them until they now number more than two hundred. (At the first meeting of this International Congress in Paris, in 1889, a previously unnoticed disease, discovered simultaneously and independently in France and America, was first brought to your attention. Now we are able to show other dermatoses with which some of you are unacquainted.)

Perhaps a word of caution regarding the unnecessary division of diseases and multiplication of titles may not be out of place here. It seems to me that some of us are over-inclined to magnify the significance of slight clinical variations, to attribute to them specific importance, and to emphasize their pseudo-independence by bestowing upon them titles of individuality. In my opinion we should not change well established landmarks except for reasons founded on demonstrable differences in anatomy or etiology. Then, too, the character of modern titles has become a matter worthy our serious consideration. It has become too complex and cumbersome, as has the nomenclature of other departments of natural science. There was a time when naturalists were content with simple generic and specific names; now every flower or bird must have at least three or four individual titles bestowed upon it. Are we not in danger of exceeding even this redundancy? There is evident a disposition to avoid such profuse and exhaustively descriptive nomenclature by calling a newly established dermatosis by the name of its sponsor, as Bazin's disease, Kaposi's disease, etc. Some fifty or such titles might be enumerated. This is an entirely arbitrary system of designating a disease, suggesting nothing descriptive of its nature, or its proper position in any plan of scientific classification. If it continue, a pocket glossary will soon become necessary to every reader of our literature, unless blessed with an exceptional memory. Such titles, like those geographical names given to affections of remote regions, may be admissible until the nature of the disease be fully elucidated; then they should be properly christened and registered. It should be one of the most important functions of this international body to prepare and officially adopt some satisfactory system of classification and nomenclature, to which we should adhere for the common good. I believe the creation of a standing committee of this association to consider the subject in a broad way, on which should be representatives of all our great nations, unprejudiced by past systems of schools or individuals, would result in vast advantage to dermatology. The establishment of such an international code should not be an impossibility. Let us undertake it.

And are there not other matters coming within the bounds of our field of medicine, which we, as the most competent body in existence, should take a more prominent part in than heretofore? Should we not feel it incumbent upon us to assume a more advisory and executive position in relation to sanitary questions of international interest, rather than the merely academic one we have hitherto occupied? Had we conscientiously in-

terpreted our highest functions in this direction, it would scarcely have been necessary to found a special international congress for the study and control of leprosy, of syphilis, and of cutaneous tuberculosis. But even if we have allowed our sphere of usefulness to be thus curtailed there yet remain many important questions for us to act upon. I will mention some of them:

1. What are the influences of race, geographical conditions, climate, national customs, etc., upon the evolution and type of diseases of the skin?

2. What variations does emigration induce in dermatoses?

3. What cutaneous affections should national governments regard as infective, and seek to control by restriction of immigration, by enforced insulation, and similar measures?

4. How far is it practicable and incumbent upon national governments to control the continuance and prevalence of hereditary dermatoses by restriction upon marriage laws?

5. Should not the influence of this body be directed to induce governments to aid in the support of researches bearing upon sanitary questions of national importance?

We must all alike be greatly interested in the investigations which have been recently carried on by our colleagues in certain tropical regions which are of vast importance to dermatology and general medicine. We are fortunate in having before us the great privilege of hearing the results of their researches directly from some of the most eminent of them. Primarily these studies have been undertaken so far from the usual centers of such research, because there only could be found available in sufficient abundance the requisite material. Fortunately, we are not yet differentiated so widely from our simian relatives in the physical character of our tissues, that we do not possess in common the susceptibility to the invasion of certain morbific agencies, which are the cause of some of our most disastrous diseases. As their serious nature inhibits the application of the ordinary methods of experimentation to our fellow men, it is indeed fortunate that we may legitimately use these lowly brethren for such purposes.

With the important studies concerning the nature of the variolous affections made at the same time in Manila by Drs. Brinkerhof and Tyzzer you are acquainted. (Their results are published in the *Journal of Medical Research*, January, 1906, under the title: "Studies upon Experimental Variola and Vaccinia in Quadrumana.") I am happy to announce that Dr. Brinkerhof has accepted the appointment from our National Government of medical director of the establishment for the care of lepers in the Hawaiian Islands, and will devote himself for five or ten years in the laboratory he has established on Molokai to the study of this disease. These researches, unrestricted in scope, conducted by so accomplished an investigator, are of great promise.

And there are not a few other affections of close interest to us of which we see only an occasional immigrant example, which can be properly studied only in their tropical home, and should be there studied by experienced dermatologists. It is evident that such researches cannot be carried on at the personal expense of such investigators, or by any one national government on a sufficiently comprehensive basis. It can be accomplished only by the combined efforts of the medical profession of all nations. Now, fortunately, we have in this association just the right body to carry out this all important work. Such an undertaking on our part should be regarded as one of our most appropriate and essential functions. A large fund should be raised, and the aid of our respective governments should be solicited in behalf of the plan. An international committee, composed partly of members of this body, partly of well-known authorities on tropical diseases in all parts of the world, might be established under our administration, which should raise the means for and superintend such investigations. Think of the vast benefit to medical science if we could send out properly trained investigators to any regions where questions of great interest and grave international importance demanded solution. May I suggest that a committee be appointed at this meeting to consider the subject and to report before the adjournment of the congress?

THE NEW PATHOLOGY.

Looking backwards over my fifty years of study and practice in affections of the skin I am led to ask myself, What are the most prominent marks of progress I have observed, and what the present signs of promise are?

I recognize three distinct eras of advance:

1. In place of the artificial systems of classification based on such narrow lines as similarities in external manifestations, especially in the so-called "primary lesion," a superstitious belief in the existence of purely imaginary influences or diatheses as a foundation of etiology, and a survival of the old doctrines that all dermatoses are necessarily merely surface expressions of internal systemic disorders, and that the cutaneous tissues are denied the possibility of independent pathological modification; in place of such an unscientific status as then prevailed there came about, largely through the powerful teaching of a great master, a proper appreciation of the meaning of external manifestations and a regrouping of the mutual relations of individual affections, the recognition of the pathological independence of cutaneous changes, and a healthful skepticism with regard to undemonstrable creeds; a school based on purely clinical data was inaugurated, an immense step upwards, an emergence above the clouds of superstition and fetishism.

2. Under the analytical spirit infused into all departments of medicine by Virchow, students in dermatology did not long remain satisfied with the old methods of studying the anatomical changes which underly the surface expressions of cutaneous disease, but with the resources of improved technique carried their researches into

the minutest details of tissue modification. Thus was built up a knowledge of cutaneous pathology, by which some sort of scientific classification became possible. It was one of anatomical affinity, of identity of structure in the place of one founded on merely external resemblances. This was, indeed, a great advance, but far from satisfactory. It might show that the tissue changes in lupus and leprosy, for instance, closely resembled each other, but not why they clinically were so far apart. It gave not the slightest clew to their etiological relations.

3. There was revealed to one or two patient investigators through advanced methods of technique the presence in the tissues of these two most important diseases of foreign organisms, which explained all the phenomena we had been so blindly observing. This was the key to the secret of causation which had so long baffled us. I need not dwell upon the all-importance of this discovery, and the constantly increasing development in methods of research to which it has led. It has already taught us a vast deal as to the real nature of cutaneous disease, the means of controlling some of the most dangerous forms of pestilence, and given us the hope of solving the mystery of much or all that yet remains unrevealed to us.

These, then, are the three eras of advance within my experience:

1. The knowledge founded on a more careful study of the external manifestations and unbiased interpretation of clinical phenomena.

2. A deeper knowledge of the minute anatomy of tissue changes in, and a more scientific grouping of, dermatoses.

3. The recognition of the real nature and cause of visible lesions and underlying tissue changes and the essence of disease, — a true system of pathology, — the promise of attainment of the power of prevention, of establishing immunity, of founding a broader system of rational therapeutics.

And how shall we interpret the action of the micro-organisms which have been found in so many cutaneous diseases, or which our justifiable convictions forestall the revelation of their existence in others, to such an extent that the remainder will be the exception to such etiological relations? The effects of the parasitism on cutaneous tissues of our earlier experience was purely local and simply inflammatory in character. The trauma of animal parasites produced a slight degree of superficial dermatitis of the immediate surrounding area, sometimes followed by widespread secondary disturbances in consequence of the pruritus thus excited and subsequent scratching. The then known parasitic flora excited also purely local changes in the skin and appendages of unimportant nature. Neither animal nor vegetable forms gave rise to any constitutional disturbance, or endangered life.

Then came the demonstration of the existence of other forms of parasitic organisms in the tissues of far more serious diseases, the etiological relations of which have been established on irrefragable evidence. The tissue changes produced by their presence, both local and remote, and their influence upon their host are of the gravest character, some of them in fact being the cause of the greatest mortality in mankind and other animals within historic times. How can we account for such deadly influences inherent in such infinitely minute organisms, or for the striking differences in the nature of the manifestations they give rise to, in their periods of incubation, the diversity of tissue changes they cause, their variations in course from a few days to many years? Here are two so-called bacilli of minute size, so like in appearance and reaction under known reagents that they can scarcely be distinguished by the most experienced observers, yet just as the human ovule or the plant germ carries with it the inherent capability of building up from the material furnished it the stately tree with its century changes, or the heroic future of a man, so does the micro-organism of lepra bear within its simple and insignificant form the power of transforming human tissues into the fell shape we know; and so does the other possess the undeveloped power of causing the cutaneous tissues to express the influence of its presence in quite different objective forms, and of adding countless victims to the "great white plague." Some of them, too, have a mysterious power of protection, of bestowing immunization upon their human host.

How shall we, I repeat, explain such manifold and far-reaching powers? Can they be mechanical, in part, at least? When we consider the effect of the smallest particle of foreign inert matter upon human tissues at times, the "spec" in the eye for instance, we cannot deny the possibility of such sort of action, in some measure, at least. Can they be chemical in nature? We have only to recall the influence of organisms but slightly higher in the scale of vegetable life, in producing new and beneficial modifications in organic compounds, — the alcoholic and acetous fermentations, for example; or of the most disastrous nature, as some of the oidia. We may feel assured that they, too, may possess the inherent property of generating products too subtile to be recognized by our limited analytical agents, and well capable of producing all grades of tissue change in their immediate presence, as well as those which express themselves in other ways throughout the whole economy; or is there some other subtler form of influence at work, the nature of which is wholly unrevealed?

To such remotely manifested influences we give the name toxins, a well chosen title, perhaps, but bearing in itself no interpretation of their nature. To such mysterious powers we may attribute the prodromal and evanescent cutaneous manifestations in lepra, and the long delayed surface lesions in tuberculosis we call tuberculides. In the solution of this grave question — the nature of the action of such micro-organisms upon human tissues — we have before us an untrodden field of research. The satisfactory answer may be surely expected, for there is no secret of nature which human intelligence may not eventually comprehend.

THE RESULTS OF OUR KNOWLEDGE OF MODERN CUTANEOUS PATHOLOGY ON PRACTICAL THERAPEUTICS.

Is it not lamentable to confess how loitering has been the advance in practical therapeutics upon our recent progress in the knowledge of cutaneous pathology? We are well nigh as helpless in the control of our gravest, as well as of our most common, dermatoses as we were half a century ago, and our most successful therapeutical measures are as empirical in nature as they have ever been. A few until recently unrecognized physical agencies have been employed, working some good, and evil as well, but we are learning that their beneficent powers have narrow limitations. We have recognized the parasitological nature of more and more affections, but our parasiticides can control only the most superficial of them.

So far, our researches in the portentous realms of immunization have not brought forth such practical results as did the shrewd, unaided observations of that old English country physician, Jenner. Can we predict with certainty the curative results of our prescriptions in any individual case of eczema, or psoriasis, or lichen, or acne, or the other common dermatoses which fill our daily clinics, results which convert our most confiding private patients into doubters of our skill, and give encouragement to the ingenious efforts of the nostrum manufacturers? Have we any power over the pigment producing layer of the cuticle? Can we control the disordered actions of the sweat glands? Who claims ability to cure lupus erythematosus, not the one case, but every case? Have we a surer power over the deeper and graver forms of cutaneous disease than the surgeon's hand of fifty years ago?

Now I am not a pessimist in therapeutics. I know that the skilled dermatologist does a vast amount of good in the relief of human suffering, and is fully as successful in dealing with disease as physicians in other fields of practice. Unfortunately for us the immediate results of treatment are always in view. Still I believe in an honest recognition of our present limitations as one of the steps towards securing greater powers of control in the future. I look forward with assurance to the slow coming of successful and rational methods of cure, of which a few happy glimpses have appeared.

PROGRESS.

Even since the last meeting of this congress in Berlin there has been a noteworthy progress in dermatology, especially in research work. The great activity and general interest in this direction are shown by examination of the current literature in connection with a single question. The discovery of spirocheta pallida, its etiological relations to syphilis, and its revolutionary bearings upon the pathology of this disease, have stimulated the production of several hundred articles from observers in all parts of the world. The transference also of the field of investigation in this and kindred diseases from man to his nearest relatives in the animal creation has led to surprising and most important results. Your committee of organization has selected, therefore, as themes for special consideration such subjects as will enable distinguished workers in these fields of research to present to you the results of their latest investigations and conclusions.

You are all familiar with the self-sacrificing spirit in which our distinguished colleague, Professor Neisser, has devoted himself, time, revenue, comfort, to the study of this most important subject, syphilis. How he transferred the field of his investigations from his clinic and observations upon human patients to the distant tropics and the home of the higher apes. You know the invaluable results of the experiments there made. You have read also in his recent report to the German government the details of this work. He was to have been with us on this occasion to present his latest conclusions from the results thus obtained, but alas, in obedience to the call of that government, which has generously appropriated 100,000 marks for the continuation of these investigations, he has again banished himself, with his devoted wife as co-laborer, to the Orient, and sends us a message of his regret that he cannot be present with us. What an example of clinical experimentation on a grand scale, of noble devotion to science and humanity. Will you, his colleagues from all parts of the world, join in sending him our best congratulations upon his continued good health, and a sincere expression of our high appreciation of his all-important labors?

And I would say a word, too, for those dumb relatives of ours, the anthropoid apes, who show their near affinity to us by their susceptibility to this great curse of mankind. Would they could comprehend our grateful appreciation of their passive sacrifices for humanity.

And I cannot close this brief account of most recent progress without alluding to another therapeutic agency evolved from research work in the field of micro-parasitology, the protective and curative influence of the introduction of the modified essence of disease-producing germs within the economy, which we call opsonism. This subject will also be presented by competent observers.

In the face of such surprising results of research in the past few years how inadequately can the keenest imagination foretell the possible progress of the coming decade.

The marked increase in the number of dermatological societies in all civilized countries, some twenty or more existing at present, and the twenty to thirty journals devoted exclusively to the literature of our specialty bear witness also to the progressive interest shown in dermatology, so that it has become well nigh impossible to keep in touch with such a record. You may be surprised also to learn that the number of invitations to attend this congress, sent only to those especially interested in our department of medicine, is twenty-five hundred.

NECROLOGY.

But, alas, it is my sad duty to make brief mention of those who have hitherto worked with us, and who have left us forever since our last meeting.

Neumann, Barthelemy, Tarnowsky, Haslund, Du Castel, Mauriac, Finsen, Shaudinn, Atkinson, Greenough, Allen, Dron.

Some of them were among our most distinguished colleagues, who had labored long and nobly for science and humanity; others were only at the beginning of their brilliant career, already illuminated by splendid achievements — one of them, Allen, a lamented member of your organization committee. During my professional life some forty conspicuous colleagues in our specialty, some of them the great masters, have died. May I ask you to rise for a moment in respect to their memory?

CONCLUSION.

And now in closing I invite your attention to the full and inviting program which the organization committee has prepared and placed in your hands. They have solicited contributions upon the most important subjects from distinguished dermatologists of all countries, and if we have not met with that degree of generous response from our foreign colleagues we expected, we hope with the aid of those who honor us with their presence to make the congress a success.

Original Articles.

THE PROSTATE FROM THE SURGICAL STANDPOINT.*

BY CHARLES S. BENSON, M.D., HAVERHILL, MASS.

THE literature on the prostate gland is most voluminous. One can find carefully prepared statistical reports; papers proving to the writers' satisfaction the only and best method of operative attack. Others show conclusively that catheter life is the only way to handle these sufferers, until the outraged bladder settles the question in its own way.

For all exhaustive treatises, anatomy, functional physiology, histology and pathology, I refer you to the interesting works of Denver, Young, Willy Meyer, Guiteras, Murphy, Chetwood, Keyes, Watson and a host of others. It is a simple matter to abstract any and all of these writers, but of what avail to you and me, for such would be inferior to the originals which lie within your reach.

My personal operative experience is confined to but few cases, all done by way of the perineal route, and all cured, which fact is of little value considering the small number, for the next few may go the other way.

As an interne, however, I assisted at no small number of prostatectomies, and cared for these afterward. Most were done suprapubically, and I have since been rather prejudiced against this method, for convalescence was stormy and mortality was pyrotechnical, as I look back on the fistulæ, and infections of the prevesical space.

Since this paper was presented in the winter I have added two cases only, one of which is now two weeks in the hospital and apparently doing well. This is my only case operated upon by the suprapubic route, and for the reason that it seemed best to divide the operation into two stages.[1]

With only these few prostatectomies to my credit, it may seem presumptuous to address you, but I crave your indulgence for so doing and further ask your tolerance in that I may make these remarks personal, not abstractive, nor quotative, merely as the subject appears to myself. Suppose, then, we discuss the prostate gland along the following lines:

1. Is the patient with a prostate which is symptomatic, better for being subjected to operation, or should he be advised catheter life as long as possible, followed by ultimate operation when catheter life is no longer possible or endurable?

2. If operation is the desideratum, what then constitute the indications for operation?

3. If not operative, is there any other treatment apart from or combined with catheterization?

4. If operation, what shall be the method of attack?

5, and perhaps this would have better come first, although I question it: What constitutes the symptomatology of hypertrophy of the prostate gland which establishes the diagnosis?

6. Prostatism without hypertrophy of the gland, its causes and treatment; the confusion of this with true hypertrophy of the prostate.

Concerning the first proposition, namely, catheter life or operation, there has been during the past several years a very great diversity of opinion as to the preferable means of procedure, and to-day it is still a very much mooted question although I think surgeons are coming nearer together as to the advisability of the earlier operation.

For my own part, it seems to me after diagnosis is established, that the earlier we operate the better the chance of life, the better the chance of complete symptomatic recovery.

To pursue the old course of using the catheter as long as the patient could be made comfortable by such means, and ultimately operating when the patient's condition had become desperate from cystitis and ascending pyelo-nephritis, is wantonly running up the mortality rate and giving us simply palliative surgery. The fact that in individual work the mortality of all methods of operation is between four and six per cent would seem to me a great argument in favor of the earlier operation, before we have infective complications.

The catheter is of the greatest use in establishing the diagnosis, and every patient should be kept under observation for a few months before deciding upon operative measures; but once the diag-

* Read before The Massachusetts Medical Society, June 11, 1907.

[1] This case died of bronchitis some weeks later, suprapubic wound not entirely closed, but clean and granulating.

nosis is unqualifiedly established, the sooner we operate the better.

When I say diagnosis, I mean more than merely that a patient has hypertrophy of the prostate; I mean that this patient has more than merely nocturnal frequency of micturition. I mean, more especially, that urination is difficult to start, is what we call stuttering and stammering during the act; stops slowly with considerable dribbling and soiling of the clothing, and that the relief which ordinarily comes from emptying of the bladder is not experienced by the sufferer from prostatic hypertrophy.

In other words, to go only a step further, we now use the catheter and establish that the patient has four or more ounces of residual urine after urination.

Now it is perfectly possible for this patient to have this amount of residual urine and not have cystitis. I believe that with these symptoms it is not necessary to subject this patient to years of catheter life in the future, but by operating at this time we can save this inconvenience and also get a symptomatic and actual cure.

In this connection it is only fair to say that there are certain types of cases in which operation is probably the last resort after the case has been considered most deliberately, and yet for the most part I think operation should not be undertaken or considered at all.

I refer especially to those cases coming to the practitioner, who have been so long sufferers from an enlarged prostate with its damming back of the urine, whether or not depending at the present time for their visit completely on catheterization. These patients have an atonic bladder, and operation will not cure or relieve symptomatically this condition. It should be undertaken only when there is actual danger of death, in patients comparatively young and to whom every year of life is of the greatest importance, knowing that although you remove the hypertrophy, you still go on to the end with the catheter, and your operation has been done simply to provide the means of introducing the catheter.

Another class where it seems to me operation is questionable, is in old cases which, at the time of being seen, already possess infected bladder and kidney. By all means, in these cases, I should advise a long treatment by catheter and irrigation, unless the case is so desperate that suprapubic drainage affords quickest relief for the infected condition, if there is any relief at all to be obtained. These last cases can only be judged on their individual merits.

There is no dogmatic position of No operation or Operation. One thing is very certain, however. Any operation which takes more than a few minutes to perform will certainly put your patient on the wrong side of the mortality statistics.

To take up the next topic: The desirability of operation being established, what then are the indications?

It almost seems as though I had answered this question in the preceding paragraphs, but it will do no harm to repeat.

For me, at least, I believe that operation is indicated when, upon rectal examination, we find a pronounced enlargement of the prostate gland. When there is difficulty in starting the urinary stream, and, I might say, difficulty in stopping the same, with or without necessity of using the catheter. In addition to this, the discovery of a few ounces of residual urine. These I think, after proper observation, justify advising the patient to submit to operation and enable the surgeon to hold out the prospect of a cure and to inform the patient that taken at this time the risk is very much lessened.

To take in topics three and six under one head, namely, if the case is not operative, is there any treatment apart or combined with catheterization and the subject of prostatism with hypertrophy?

It is impossible to separate these two for the very reason that the only justification of adopting a treatment other than catheter life or operation in hypertrophy of the prostate gland, is the fact that hypertrophy does not exist; that we do have a condition which I have diagnosed as prostatitis, in which there is a certain amount of irritation and congestion of the gland, without any increase in glandular and connective tissue elements, which in itself gives rise to very similar symptoms of the early stages of hypertrophy. Perhaps, if anything, this condition carries with it more pronounced discomfort than the graver type.

Given, then, prostatism of this nature, what are we to do with it?

If we consider the fact that in the majority of instances this is due to an old gonorrhea, we shall come nearer appreciating the treatment which will be most efficacious. We will massage the prostate gland and use instillations of nitrate of silver, deposited in the membranous and prostate urethra. We will use, I say, instillations, not injections, and I wish you to consider this word instillation as spelled with capital letters. It is only a few drops that should be thrown in, and the strength of the solution should be varied according to the indications arising during the course of treatment.

It is rarely that irrigation of the bladder itself will be called for. I might say it is never called for, except as we may irrigate the whole urethral tract; in the milder type of cases, filling up the bladder only that we may get a second passing of the fluid over the area selected when the bladder is emptied.

Perhaps in this connection it will be well to touch upon the possibility of treatment in cases followed with cystitis, ureteritis and pyelitis.

Kelly, of Baltimore, in examination, at one time practiced washing out the ureters and the pelvis of the kidney through catheters passed clear to the renal pelvis. A few other surgeons have tried this method of procedure but, for the most part, however, have condemned it.

I cannot help believing that it is extremely dangerous, even in the most skillful hands, and certainly it is entirely out of the province of the average practitioner who possesses neither the equipment nor the training to even catheterize

the ureters; consequently, in these severe cases we are practically limited in our treatment to vesical drainage alone.

4. Now if we have decided upon operation, how shall we proceed?

We have practically only three operative procedures before us, namely: Bottini, suprapubic, and the perineal. I purposely leave out what is known as the combined method, as being absolutely useless and dangerous in creating an unnecessary opening.

The Bottini operation has, I think, a place, but the limitations are very strict, and it requires a high amount of technical skill and training. It is adapted only to a very mild degree of hypertrophy, or perhaps I might better say to those cases which do not necessarily possess a true hypertrophy of the prostate, but only a stenosis of the vesical orifice, or what is known as the vesical bar. Its great advantages lie in the fact that generally anesthesia is not needed, that the patients are not confined to bed, or even, but for a short time, to the house, yet it is dangerous. It necessitates, also, conditions which allow of a painstaking and minute cystoscopic examination. For the most part this operation has been again assigned to oblivion and will, I trust, remain there. With very few exceptions, it possessed no merits which are not equalled or surpassed by prostatectomy; its only virtue apparently consisting in adaptability to a very small number of cases wherein general anesthesia is absolutely contra-indicated, and any measure which may give relief is justifiable, short of electing actual operative death.

Certainly, the suprapubic operation has its uses.

Personally, I think that in those cases of badly infected bladders, in which the vital tone is very much lowered, that a suprapubic opening done at first only for drainage, and irrigation of the bladder, to be followed after an interval by an enucleation of the prostate gland through the same opening, is the only proper method of procedure in these cases.

We are told that the large, soft prostates are better removed through a suprapubic opening; that the small fibroid prostates are better removed through the perineal opening. We are told by the advocates of suprapubic operation, that the urethra in part is better preserved by suprapubic operation. Yet on the other hand, within two years that party who popularized the suprapubic operation is now pleading for removal of the prostate gland *en masse*, together with the prostatic urethra, of course thus dropping one of his own arguments for the superiority of the suprapubic operation.

We are told that the operation is quicker and the drainage better by this route. I question very much if the operation is any quicker in uncomplicated cases. I question if drainage is not better or as good where the operation and the drainage are sought for at one and the same time in those cases which permit of doing the operation in one stage; certainly not where we are forced to operate in two stages.

For the perineal route which has been so strongly advocated by Young, it is said that we can see the parts as in any dissection. The same claim is made as for the suprapubic route, that the drainage is better by the perineum. It is further claimed for the perineal operation that we can preserve ejaculatory ducts, and so preserve the potency of the patient. Now as a matter of fact, I reserve for myself the same right in the election of the method of operation as I would reserve for myself if I were practising medicine. If I were an internist and I knew of any drug which would benefit my patients, whether used by the homeopathist, or the eclectic, or the so-called "herb doctor," I should use it; in operating on the prostate gland, if it seems best to me to operate by the suprapubic route, I shall do so. If I elect the perineal it will be because I think that I can give the patient better prospects for an ultimate cure with less risk to life. I do not believe that it is necessary to make a minute and painstaking dissection of the perineum, nor attempt in the vast majority of cases to preserve the ejaculatory ducts.

Most of our cases are in men well past sixty, and at the time that they come to us these patients are impotent, not only as regards their powers of procreation, but as regards their power of sexual relation, and the conservation of these powers is a matter of absolute indifference.

The median perineal incision, with opening of the membranous urethra, dilatation of the vesical neck and enucleation of the prostate masses through the lateral walls of the urethra can be done rapidly and thoroughly and will give one as perfect results as any other method of operation. There is rarely any hemorrhage, if we keep with the capsule, using the finger as a blunt dissector.

There are certain cases in which the relation between the capsule and the gland and the surrounding tissues is so intimate that enucleation as such cannot be accomplished. It is said that these cases can be better removed by *morcellement* than through a suprapubic opening.

This means rather a wide destruction of the vesical mucosa.

For my part, I think that these masses can be removed through the perineal incision, modified to give a broader exposure of the field, and it is in these cases that I believe in the technique of Young, using a tractor within the bladder, as causing less destruction of the bladder tissue than can be accomplished in any other way. It seems to me that the question of injury to the rectum has been very much magnified. If we use the exaggerated Trendelenburg position, with the thighs strongly flexed on the abdomen, we shall find that the rectum falls aways very readily from the prostate. The only question of anatomy that I shall raise in any operation through the perineum will be to keep close to the bulb dividing the recto-urethralis muscle and keeping outside the fascia of Denonvillier.

One thing which has run through the entire list of topics, if you notice, very much like a *motif* in music, although not named, has been the question

of diagnosis. Beyond what has already been said of this, I am disposed to say a little something as regards the use of the cystoscope, and also touch upon the differential diagnosis.

There is one condition in which the cystoscope is of very great value; that is, where we have an enlarged middle lobe, with comparatively small amount of hypertrophy to be felt by rectal touch.

If we can get the instrument into the bladder at all, it gives us a very good view of the extent of this enlargement and enables us to choose our method of attack with reference to the ease of reaching the trouble. On the other hand, to use the cystoscope needs a large amount of special training, or the observations are not only not of value, but they are absolutely dangerous. These cystoscopes which depend upon air inflation of the bladder, and in which the opening or the prism is situated at the end of the tube, the so-called direct cystoscope, are of no use in this condition. We need a simple instrument with a prism on the concave side and water dilatation of the bladder. To use the instrument with any satisfaction, we must follow the procedure of Young, of Johns Hopkins, who has devised a scheme for reconstructing the inverted cystoscopic image and patching together the detached picture segments to give us a schematic representation of the whole field.

In the average case of prostatic hypertrophy the cystoscope is of no practical value. There is, however, one condition of the bladder as determined by the cystoscope which justifies us in diagnosing prostatic hypertrophy without being able to feel same. I refer to the trabeculated bladder, which almost invariably is significant of enlarged prostate, with more or less urinary retention.

It is particularly important to differentiate hypertrophy of the prostate gland from new growths of the same, especially malignant disease; although in cancer we are told that hematuria is one of the symptoms, yet it occurs perhaps in not over 25% of the cases.

In the early stages the most prominent symptom for differentiation is pain. The pain of cancer is much more severe than the pain of advanced hypertrophy, if such occurs; is sharper, more lancinating and very apt to radiate in the groin and down the leg. In fact this radiation, if we omit the coincidence of stone, is almost pathognomonic of cancer of prostate. A little later we get the stony hardness so significant of malignant disease. My records give me a total of eleven cases of malignant disease of the prostate, only one of which, so far as they have been followed, has shown hematuria. All but two have had severe pain; in fact that was the first symptom noticed by the patient, and for which he sought relief. The increase in size of the prostate had not been very marked prior to the onset of cachectic symptoms.

Manifestly it is important to exclude malignant disease before we decide upon operative measures, for with the one exception where the cancer is contained entirely within the capsule of the gland, operation is absolutely hopeless.

Then, too, simple hypertrophy of the prostate gland, or a congestive condition which has passed beyond the actual acute stage, calling as they do for two entirely different lines of treatment, should be carefully distinguished.

Retention of urine, difficulties in urination, in fact, practically all the symptoms that go with hypertrophy, are present in this congestive state. Even residual urine can be found, without the evidence, however, of any cystitis. This condition may persist for many weeks. Its treatment, however, is merely the employment of massage, instillations to the membranous and prostatic urethra; perhaps also enemata of hot water or the irrigation through a metal closed tube of hot water by way of the rectum.

Then, too, we should differentiate between a primary pyelo-nephritis, to which the cystitis is secondary in a man well past fifty, who in the natural order of events would possess a prostate gland which to the touch is more or less enlarged. Exclusive of the actual retention of urine, he may possess all the symptoms of the sufferer from prostatic hypertrophy, and only the most careful consideration of the previous history will help to establish the diagnosis; and it is in this type of case where operation for the prostatic trouble is practically almost always contra-indicated.

We cannot use a cystoscope to catheterize the urethra, on account of the dangers of increasing the infection and causing uremia; nor is it going to be of very great value should we succeed in securing the urine from one or both kidneys, for the reason that the whole question hinges on the fact of the infection being of an ascending or descending character. As regards the existence of stone in the bladder, the operation for relief of the hypertrophy of the gland will serve for the removal of the stone. In other words, there is a limit to the size of the stone which may be removed by way of the perineum. There is practically no limit to the size of the stone which may be removed by the suprapubic operation.

Abscess of the prostate gland may simulate acute prostatitis and, with the exception of tuberculosis and what is practically a chronic abscess, comes into conflict with the prostatic hypertrophy but very rarely. Save as in massive acute abscesses, I think that the ordinary prostatic abscess should be evacuated through a perineal incision and not by the old method of a curved trocar thrust into the abscess through the rectal wall or by incision through the rectal wall. Incision through the rectum is, however, I think justified in those large abscesses which pronouncedly bulge into the rectum, and often by pressure bring the rectal walls practically together.

Cysts of the gland require no especial mention. If large enough to give symptoms, they require evacuation and, of course, are better done through perineal incision. It is largely a matter of indifference whether we diagnose cyst of the prostate or hypertrophy of the prostate.

If we find a cyst we stop with our evacuation.

If we find hypertrophy we simply proceed and enucleate the gland.

Tuberculosis of the prostate is rarely a primary disease, usually being secondary to tuberculosis of the testicle and seminal vesicles, and in those rare instances where we find it as a primary focus, its symptomatology will be largely that of abscess, either acute or chronic, and its treatment will be surgical only in so far as it is an abscess.

During the year, in the course of my office practice, I see a great many cases of chronic gonorrhea with all its complications, and I find that daily I am either examining or treating by massage several cases in which there is apparent enlargement of the prostate gland.

These cases, of course, are simple cases of prostatitis, and yet they are undoubtedly on the road which will bring them in later life to hypertrophy of the prostate. Coincident with these cases, and really the cause which keeps alive the prostatitis and the gonorrhea, is inflammation of the seminal vesicles, and it is really by the emptying of these vesicles, through massage, that we improve and cure the gonorrhea and, to a large extent, the prostatitis, although in long-standing cases it is my opinion that changes have taken place in the prostate from which the gland never recovers.

An analysis then of what I have said to you to-day resolves itself practically into the following: A plea for the education of the public as we meet members of it in our offices, in regard to the dangers of neglected prostatic hypertrophy. A plea for the earlier recognition by the physician and surgeon, and after a careful hearing of all the evidence, the advice to the patient of a much earlier operative interference than has heretofore been the custom, for the sake of cure of symptoms and conditions and the danger to life itself. A plea not to send the patient to a surgeon who elects, or to perform yourself, a suprapubic or a perineal operation without due regard for all the facts in the case, but to advise your patient, and so do yourself, that which shall be the best for the individual concerned, remembering that time in operative work is a very great feature, in the fact that it lessens anesthetic shock in a patient already on the downward path of life.

Of course it goes without comment that this saving of time shall not be at the expense of clean, smooth work, nor is it necessary on the other hand to exaggerate infinitesimal details.

There is no place in the surgery of to-day for either the putterer and bungler, or the man who is all "front" and gallery play, when dealing as we are with life, attempting to the best of knowledge and ability to keep it from fluttering into the "Great Beyond."

Johns Hopkins Needs New Buildings.—President Remsen of Johns Hopkins University urges the immediate need of increased accommodation for the work in pathology in the medical school. From the beginning, this department has occupied a building owned by the hospital which has become inadequate in size and equipment.—*Jour. Amer. Med. Asso.*

THE TREATMENT OF SIMPLE INFECTIONS OF THE STAPHYLOCOCCUS AUREUS WITH THE "VACCINES OF WRIGHT."

BY H. F. HARTWELL, M.D.,
AND
ROGER I. LEE, M.D.
(*From the Pathological Laboratory of the Massachusetts General Hospital. J. H. Wright, M.D., Director.*)

In many cases vaccine treatment is complicated and requires the application of special knowledge, but we have found that there is a certain type of infection in which the vaccine treatment is conspicuously successful and at the same time straightforward and simple. This type of infection consists of localized surface infections, such as boils, carbuncles and septic wounds. In practically all of these cases it is fair to assume that the offending organism is the staphylococcus aureus. Our communication is based on an experience with about one hundred of such cases, which have been obtained mainly from the wards and Out-Patient Department of the Massachusetts General Hospital.

We have found that it is not necessary to prepare the vaccine from the identical organism of the lesion, an "autogenous vaccine," but that these cases do equally well when treated with a vaccine of staphylococcus aureus derived from any source, a "stock vaccine." The stock vaccine is prepared according to Wright's method and put up in bottles of 50 cc., each cubic centimeter of which contains 600,000,000 dead organisms. We have found that vaccines are not so efficacious after they have been kept for two months, and we therefore prepare fresh vaccines about every six weeks. They are preferably kept in a cool, dark place.

In many of our earlier cases we followed the opsonic index, but we have found that equally good results could be obtained without the index. We have inoculated our patients at intervals of four days. This period had been arrived at by the early studies on the index by the writers and by Dr. Roger Kinnicutt, and by watching the clinical manifestations of the lesions. We give as an initial dose ½ cc. containing 300,000,000 organisms and at the second inoculation a full cc. or 600,000,000. This last dose is repeated every four or five days until the lesions are cleared up. As a rule two or three inoculations will clear up a single focus; a boil will have discharged and dried up while a carbuncle will have sloughed out and left a clean and granulating base. Most cases will have regained their natural immunity and will require no further treatment. Some, however, will not regain their immunity for a longer period, and during that time inoculations to provide an artificial immunity are necessary to prevent a recurrence of boils. These patients have been inoculated at intervals of seven days for three or four times after their acute lesions have been cleared up and then they have been instructed to report for inoculation immediately on the appearance of the smallest pustule. By these infrequent inoculations we have found it possible to prevent the recurrence of lesions during

a period of six months in a patient who has not been free from boils for two years.

The inoculations are given deep into the subcutaneous tissues (previously sterilized with alcohol), preferably in the abdomen or back, choosing a region which is free from the pressure of clothing. A fresh site is taken for each successive inoculation to avoid the production of a local immunity. We have always boiled our syringes and have had no suppuration or anything more serious than a trifling discomfort at the site of inoculation. A slight constitutional reaction is sometimes noted, especially after the first inoculation. It has been present in about one half of our cases and usually shows itself in headache, backache and lassitude. These symptoms appear a few hours after inoculation and have entirely disappeared in twelve hours. We have never seen changes in temperature, cutaneous eruptions, or arthralgias, such as frequently follow the inoculation of sera.

The changes which take place about the lesions are striking. There is a marked diminution in the pain and tenderness. After twenty-four hours there is a profuse discharge which continues until the focus clears up. If the lesion has already broken down and is discharging no further opening need be made, but if the pus is still confined a small opening should be given for drainage. Opening up wide areas of tissue and curetting delays the reparative process. According to the experience of Wright antiseptics nullify the action of the opsonins and have not been used. The pus has been absorbed into sterile gauze. When sloughing tissue has been present it has been removed with forceps. We have occasionally seen lesions disappear during treatment without breaking down.

We have selected a few cases from those which we have treated which will serve to illustrate different types. We are well aware that simple boils tend to cure themselves, but we can only say that patients so afflicted prefer treatment by vaccine to any other method to which they have been subjected. The following is a case of simple boil:

CASE T., about one week before had a boil on neck, which was opened twice and wicked. Neck was sore all the week. Now for two days has had red, indurated tender boil on neck, with some constitutional symptoms. He was given 300,000,000 of stock vaccine of staphylococcus aureus. In the morning the constitutional symptoms had disappeared, the boil was discharging freely and there was no tenderness. In four days only the scab remained. At that time a second inoculation of 600,000,000 was given.

With boils about the face this treatment is of value as it prevents unsightly scars as in the following:

CASE P., a middle-aged woman, was seen with a boil the size of a dime, just to the left of the upper lip. The skin at its summit was broken down and there was a slight discharge. She received two inoculations. Four days after the first the boil had discharged freely, all tenderness was gone, and a slight induration, with a serous ooze at its summit was all that remained. A cocoon dressing was kept on during treatment to absorb the discharge.

The great advantage in treating carbuncles with vaccine is that they can be healed in a shorter time without a radical operation and the patients can be at work while under treatment.

CASE H., a young man, first seen on June 11, with a carbuncle on the back of his neck, which was of ten days' duration. It was two inches in greater diameter. He received three inoculations. The sloughing tissue was removed with forceps, as it loosened, and on June 19, all that remained of the lesion was an area of clean granulations the size of a dime, with a surrounding zone of indurated tissue. There had been severe pain until the night after the first inoculation, when the patient had a comfortable night. The pain did not return.

Cases of chronic furunculosis can be cleared up and kept free from serious recurrences.

CASE G. The patient was a doctor, who for several years had had boils of various severity. These had been incised, excised, cauterized, treated by crude carbolic, etc. He presented several typical boils on his neck and one on his face. These were all tender, some discharging. No local treatment was attempted. He was given 300,000,000 of the stock staphylococcus aureus vaccine. He was inoculated at irregular intervals of four to ten days. He stated that the inoculation took the pain out of the boils almost immediately, but that they recurred after six days. He was then inoculated every four days for four times. After the third inoculation the lesions were all cleared up. He has had no serious lesions since then, three months ago. He is emphatic in stating that the present treatment was the easiest and most effectual he had ever had.

Most abscesses with good drainage will promptly heal, but there is a certain definite type which will remain sluggish and indolent and will not clear up, as the following case shows:

CASE A. N., a young girl with axillary abscess which was incised and drained. In spite of good drainage considerable induration persisted, which did not yield to hot poultices. There were numerous small pustules about the wound. After ten days she was referred to one of us and immediately given 300,000,000 of stock staphylococcus aureus vaccine. Four days later the induration was largely gone and the wound was healing fast. She was subsequently given four more inoculations of 600,000,000 at four-day intervals, the last inoculation being given after the wound had healed.

We have observed a very few cases which have not responded well to treatment. Cultures from these cases have shown them to be infections with staphylococcus albus or streptococcus. Administration of appropriate vaccines has been followed by a prompt response. These cases are rare.

CONCLUSIONS.

1. Treatment with vaccines is the most effectual treatment for boils and carbuncles.

2. Although the vaccine treatment does not prevent recurrence, cases of chronic furunculosis can be absolutely controlled by occasional inoculations.

3. Vaccine treatment is a valuable surgical adjunct in appropriate cases.

4. The treatment of this class of cases can be successfully carried out without the estimation of the opsonic index and without any special technical training.

A CASE OF RABIES.

BY CHARLES F. WITHINGTON, M.D.,
Visiting Physician, Boston City Hospital.

H. M., aged fifteen. Errand boy in a grocery store. Father and mother living and well. No history of insanity or extreme nervousness in either side of the family. Patient is the third of eight children, six of whom are now living, and none of whom have ever had any nervous symptoms. While pregnant with this child the mother had no illness or injury, and the delivery was normal.

The patient had scarlet fever at four years. He has always been a wilful child. Seven years ago he received a blow above and to the outside of the right eye, which has left a depression in the skull. Since this blow he has been subject to headaches and vomiting, especially if he became very tired, and more often during the hottest days of summer. The attacks last only one day.

Six months ago he was treated at the Massachusetts General Hospital for "lung trouble."

Patient entered my service at the Boston City Hospital March 31, 1907.

On Dec. 17, 1906, when near his home in East Boston, he was bitten on the left side of the upper lip by a dog which at the time was sick and which died about twenty minutes after biting him. The dog's body was disposed of by some boys and the subsequent attempts of the Board of Health to find the body were unsuccessful.

The bite produced a lacerated wound of the lip, which was immediately dressed at the Relief Station, and the following day he was admitted to the City Hospital, on the surgical side.

He remained in the hospital one week and the wounds were dressed with iodoform wicks. Some pus discharged from the wounds and the sutures were removed at once. The night after he was bitten he was nervous and slept poorly. He had no chills and no headache.

After being discharged from the hospital he appeared to be well and continued so till March 29 (one hundred and two days after being bitten by the dog).

On that day the boy was kicked by his father, and was deeply grieved at the assault, having always been on very friendly terms with his father. He had headache that afternoon; no vomiting. Felt very nervous. The next day the nervousness increased and the mother noticed that he could not swallow; also that he acted queerly. These symptoms grew rapidly worse until he entered the hospital.

At entrance he had a flushed face; temperature 98.4°; pulse 88; respiration 20. Pupils equal and react to light and distance; expression of the eyes somewhat staring. A small depression in outer table of skull was observed to the right and above the right orbit.

Heart of normal size; action regular and of good strength. Faint systolic murmur heard over precordia, best at apex. Chest and abdomen otherwise negative. Knee jerks present, equal.

The boy was very nervous, somewhat irritable. He tossed about with almost incessant motion of some part of the body. He was mentally clear and talked incessantly about himself and of how many things he had had the matter with him. Said he had been written up in the papers and appeared rather proud of it. He complained of dryness and tightness in his throat. Something seemed to be gripping him there. His arms and body thrashed about. About every thirty seconds he jumped up in bed and expectorated very forcibly, as if he had something unpleasant in his mouth which he wished to expel as quickly and thoroughly as possible. What he spat was a frothy, rather thick saliva. There appeared no excess of saliva in the intervals of the spitting. The spitting in each case followed a gasp for breath.

His condition appeared rather hysterical, but he did not cry. On being ordered to keep still, he made an evident effort to comply, which was successful for a few seconds, after which he would again spring up and spit violently. At entrance he swallowed milk readily. He drank water also, but with more apparent effort, draining the glass, and with slight twitching movements afterward. The next morning he took a boiled egg, but only a little milk. He swallowed water when told to do so, but immediately afterwards had clonic convulsions lasting a few moments. There was, however, no hydrophobia. The sight of water did not disturb him and he even asked for it.

On April 1 the picture was as already described. He referred to the fact that his condition had been spoken of in the papers and that people had talked much about him; that he had had "many kinds of sicknesses." The movements of his body were sudden and violent. Once his hands were observed in the position of tetany, but pressure over the upper arm failed to reproduce the spasm. Generally the motions were those of a jactitation. Preceding the spitting and apparently the cause of the sudden up-spring was a sound in the throat as of a laryngeal or pharyngeal spasm which subsided after the expectoration. He spat with great violence.

No Babinski, Kernig or Oppenheim reflexes. Patellar reflexes normal. Sensation good.

Patient still exerts an obvious mental control of his jactitation for a few seconds when warned to do so.

The following history from the time of the last note till the patient's death, some seven hours later, is from the notes of the house officer:

On the same day, April 1, patient was given his clothes about 1 P.M. with the idea that he might be more comfortable in a chair, as he was so restless in bed. A few minutes later he fell out of chair and had clonic movements of hands and legs, with extreme salivation. He was then put back to bed.

During the afternoon the symptoms grew worse. Restlessness increased and salivation became marked. About 2 P.M. the patient became wildly delirious, with extreme clonic movements of arms and legs, laryngeal and pharyngeal spasm and marked cyanosis. Large amounts of reddish froth exuded from nose and mouth. Patient had extreme dyspnea, rolling of eyeballs and an intermittent sharp, high-pitched cry. He moved head from side to side, with jaws opening and shutting spasmodically, but made no noticeable attempt to injure any one. Transfer of patient to lower ward was accomplished at this time, with considerable struggling and resistance on his part. Morphia gr. $\frac{1}{4}$ was given at this time. As soon as patient reached the ward ether was administered and convulsions controlled. Color improved after etherization and spasm of larynx ceased to some degree. On recovering from ether (3 o'clock) he was somewhat quieter, though markedly excited. He seemed to know that he was in a hospital, and for a few moments at a time would be practically clear mentally. At other times he had delusions of persecution. He kept repeating that while everybody seemed to think that he had hydrophobia, he was sure he did not have it, and that if his hands were untied he would act quietly and behave himself. He also kept asking for water, and stated he was sure he could drink it without trouble. The pulse at this time was 160, of fair volume and tension. Heart sounds clear and sharp, soft systolic murmur at apex, no enlargement to right. Condition remained about the same for one hour (4 P.M.) when patient was offered water.

As soon as he saw the glass his convulsions came on again with increased force, extreme cyanosis of face with spasm of larynx and pharynx; large amount of froth coming from nose and mouth. He was again etherized, and following etherization remained quiet for about fifteen minutes, when he had another convulsion. Ether was again administered, with ¼ gr. of morphia. Pulse slightly more rapid, but volume and tension remained about the same. From this time convulsions became more severe, and he remained in this state until 6.05 P.M. Pulse remained fair in quality up to this time, when it suddenly disappeared at wrist. Heart sounds became rapid and feeble; area of dullness increased to right mid-clavicular line. Convulsions ceased, cyanosis became extreme and patient died quietly at 6.10 P.M.

The autopsy, as will be seen, demonstrated besides the Negri bodies which are believed characteristic of rabies, a persistent thymus, general lymphoid hyperplasia and a small aorta, which mark the so-called status lymphaticus, often the cause of sudden death in children.

The essential features of the autopsy have been kindly summarized by Dr. F. B. Mallory as follows:

"The post-mortem findings in this case may be briefly summarized as follows: Three irregular scars on the face; moderate general edema of the subcutaneous tissues; marked dilatation of the right side of the heart; congestion and edema of the lungs; persistence of the thymus gland, which weighs 23 gm.; hyperplasia of the lymphoid tissue throughout the body; slight internal hemorrhagic pachymeningitis; small cyst of the pituitary body; mypoplastic aorta.

"Microscopic examination shows fatty degeneration of moderate degree in the heart and kidney, and marked in the liver and intima of the aorta.

"The histological examination of this case is not yet finished, but so far as completed shows nothing remarkable except the presence of the Negri bodies, which are characteristic of rabies, in the Purkinje cells of the cerebellum. They occur in the cytoplasm of most of these cells and frequently also in the cell processes. In numbers they vary from one to seven or eight. The size is quite variable, but many large, oval forms of characteristic appearance occur. The bodies show the well-known acidophilic staining reaction and stand out very distinctly in sections stained by the anilin blue connective tissue method.

"The cerebrum and cord have not yet been examined."

SOME PERSONAL EXPERIENCES IN ABDOMINAL SURGERY.*

BY A. C. HEFFENGER, M.D., PORTSMOUTH, N. H.

THOSE surgeons whose professional life embraces from thirty to thirty-five years have enjoyed the privilege of seeing the most wonderful advance in the field of surgery the world has ever known. Although advancement has been general, and brilliant achievements have been wrought in every branch, it is in the abdomen that the greatest strides have been made, and the boldest work done. During my entire course as an undergraduate, I never saw the abdomen opened intentionally by a surgeon unless it was post-mortem. Even suprapubic cystotomy was shunned, and stone removed almost invariably by perineal section. In the early seventies of the last century I assisted in the first ovariotomy I had ever seen, and the crudity of the technique and disastrous results of the operation are indelibly impressed upon my memory. The patient was a woman, about fifty years old, who had a large multilocular cyst of the right ovary. The operator and his two assistants simply washed their hands in the usual everyday manner, and wiped them on towels taken from the washstand. The operator wore a white apron, and the assistants were simply in shirt sleeves. The woman's abdomen was washed with ordinary soap and water, and a steam atomizer on an adjacent table threw carbolic spray over the abdoman and upon the operator and his assistants. A number of surgical needles of various sizes and no particular form were threaded with silk and stuck into the waistcoats of the assistants, and silk cut for ligatures was hooked over the needles so as to be handy to pull off and tie. Of course neither needles nor silk had been sterilized. A large, waxed silk ligature, consisting of half a dozen strands of silk twisted together, intended for tying off the pedicle, lay on a table with the instruments. The instruments were simply washed, dipped into a carbolic solution, and then placed on a table covered by a nonsterile towel. An incision from umbilicus to pubis was made, and a rough hand was forced around the tumor in all directions to break down the numerous and dense parietal adhesions. Pieces of peritoneum several inches in length were stripped off, and afterward found hanging to the cyst walls. An attempt was then made to deliver the cyst with the hands, but, of course, failed, and the operator plunged a trocar into the various cystic sacs, and squeezed out the contents over and into the abdomen. When the cyst was finally delivered, the pedicle was tied off in two sections with the waxed ligature before mentioned, the cyst cut away, and the ends of the ligatures left about one inch long. Small bleeding vessels were tied with the silk ligatures taken from our waistcoats, and the abdominal wound closed by through-and-through silk sutures from the same waistcoats. There was a bit of rubber tissue, which had been previously immersed in the carbolic solution, placed over the wound, the abdomen was wound several times with a bandage swathe, and the case was finished in more senses than one. Septic peritonitis ensued, with death on the fifth day.

This was the beginning of Listerism in America, and the spray and carbolic solution were relied upon to prevent infection. What a hopeless delusion! What a contrast to the scrupulous, scientific technique of to-day, and what a difference in results. Shortly after this I saw an ovariotomy done by an English surgeon in South America, who claimed to have been a pupil of Lister. The technique was fully as crude as in the one previously mentioned, but fortunately the woman lived, owing, I believe, to the fact that the pedicle was sutured in the abdominal wound, and buried; unsterilized ligatures were left in the abdomen to infect it. On my return to the United States a few years later, Listerism *per se*, had

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passed, and the beginning of modern aseptic surgery had set in. Drainage, however, in nearly all abdominal operations was a rule, showing a sad lack of faith in the principles of the new doctrine preached. The tube gradually gave way to temporary gauze drains, with an early closure of the wound, and bolder men closed more and more wounds without drainage, until finally confidence became general, and all non-septic or slightly septic abdomens were closed at once. The advent of the salt solution was a great aid in forwarding abdominal technique, and enabled many doubtful abdomens to be closed, thus diminishing the mortality rate and post-operative suffering, and hastening recovery. It is still good surgery in many sections with immediate closure of wound to leave a quart or more of salt solution in the abdomen, for it certainly prevents sepsis, and through its rapid absorption increases the blood volume, diminishes shock and alleviates thirst. The interval operation in appendicitis was a distinct advance in the surgery of the abdomen. For many years surgeons had been opening abdominal abscesses which presented against one of the walls, but were not emboldened to open a nonsuppurating cavity till asepsis came to their aid, and made it clear that invasion of the peritoneum under proper precautions was a perfectly safe procedure. When this fact became generally known the offending, and often unoffending, appendix was attacked with a vigor that fairly took the breath away from the older surgeons, and made the civilized world stand aghast with fear and wonder. The introduction of the Lembert and other intestinal sutures, together with Halsted's demonstration of the holding quality of the fibrous layer of the intestines, and the invention of the Murphy button and other anastomotic contrivances made practically a new field in the surgery of the abdominal alimentary canal. Intestinal anastomosis can be still further improved by the use of a sterile, absorbable scaffolding, say in the form of oval or round bobbins of various sizes made of gelatin and starch or dextrine, so that they would liquefy in the intestinal juices in from twenty-four to forty-eight hours. I have had patterns of these made from which moulds could be cast, and have asked several surgical dressings manufacturers to put their chemists to work to make a suitable absorbable material. To effective hemostasis with sterile and absorbable suture material, however, probably more than to any other advance, we owe our great achievements in abdominal and intrapelvic surgery, for this alone has changed the mortality rate in the graver operations from 50% to 5%. A quicker appreciation of anatomical appearances, enabling more rapid and accurate work, is another distinctive advance. Improved handicraft has lessened the size of the wound, and this, with a better knowledge of closing and treating it, has diminished mortality and suffering, with fewer subsequent herniæ.

Twenty-five years ago, abdominal surgeons were few, and were practically to be found only in metropolitan centers. Now, however, every small city is blessed with one or more, and it is no longer necessary for patients to travel hundreds of miles to obtain able and skillful operators. Many emergency cases, requiring immediate operation, and which were generally fatal, are now happily saved, thanks to the local surgeon.

No branch of surgery requires such quick comprehension of an ever doubtful problem, more ready wit, or resourcefulness. However sure one may feel of a diagnosis, it is better to qualify it till after the operation, for great surprises that may sorely tax one's ingenuity may be encountered. To illustrate I will briefly relate some cases from my own practice.

Case I. A young married woman, aged twenty-eight, mother of one living child, with no previous history of pelvic or abdominal trouble, and in apparently good general health, was sent to me with what was supposed to be a cyst of the right ovary or broad ligament. A tumor extended from the right flank to the right lobe of the liver, and thence across the abdomen under and above the umbilicus, for several inches, to the outer border of the left rectus muscle. A guarded diagnosis was given. A median incision extending above and below the umbilicus was made, and the boundaries and attachments of the tumor carefully explored. It was found to be a cyst of the pancreas, arising by a broad base from the head of the organ, and extending over the region previously mentioned. The cyst was evacuated, a part sutured to the abdominal wound, the cavity packed with gauze, and drained with a tube. She made a good recovery.

Case II. A man, aged thirty-seven, entered the hospital with violent symptoms of intestinal obstruction which had existed for several days. He gave a history of left inguinal hernia, and had worn a truss. Examination showed the left inguinal canal to be wide open, with nothing foreign in it. The finger could be passed readily into the abdomen. There was great tympanitis, and vigorous movements of the small intestine could be seen through the abdominal walls. By deep pressure a mass could be felt in the left hypogastrium. Several consultants pronounced it volvulus. As the hernia had not been down for some time, and no sac was found in the canal, incarceration seemed doubtful. The abdomen was opened by median incision, and the mass found to be a hernial sac the size of a grape fruit, with a pedicle attached to the internal ring. In the opposite free end of the sac was an opening the size of a ten-cent piece, through which a part of the small intestine entered and emerged. The opening was enlarged and about two feet of apparently viable intestine pulled out. The empty sac was obliterated by two purse-string ligatures, and the abdominal wound closed. Recovery uneventful.

Case III. A schoolboy, aged sixteen, developed symptoms of intestinal obstruction May 15, 1898. Two days later violent peritonitis set in, with infantile vomiting, fecal in character. His condition became grave, and his physician sent for surgical assistance. He was found in collapse. Inspection of abdomen showed an irregular prominence of the abdominal walls about two inches in size, and two inches to right of umbilicus. The tumor was very sensitive to manipulation, and doughy to touch. Inquiry elicited a history of congenital umbilical hernia, with fecal fistula. The hernia disappeared, and fistula closed a few months after birth. An umbilical truss was worn for some time as a safeguard. The patient was stimulated vigorously, and under ether an incision several inches long was made opposite umbilicus, and along outer border of right rectus muscle. A spur of ileum was found

crossing the middle of the wound to under surface of umbilicus, where it was closely adherent, as well as to adjacent peritoneum under right rectus muscle. Firmly attached to this spur at the umbilical end was the appendix, and wound round both appendix and spur were several coils of small intestine, dark, lusterless and barely visible. General peritonitis existed throughout the abdomen. The appendix was removed, the spur of gut dissected free, the intestinal coils unwound, and the abdominal cavity flushed with hot salt solution. The patient rallied some after the operation, but relapsed next day, and died from continued peritonitis.

CASE IV. A grass widow, aged twenty-seven, was admitted to the hospital with a history of sudden and sharp pain in lower abdomen, followed by great prostration. This had occurred several days before medical aid was summoned. When seen by a physician she was in bed and very weak, sallow and blanched, but no pain. She was ordered to hospital for exploratory laparotomy, which was done on the tenth day after her sudden illness. She most emphatically denied pregnancy, and was highly indignant at the bare suggestion of such a thing. The abdomen was enlarged and slightly tympanitic, and there was nearly 2° of temperature. A median incision was made, and a large quantity of dark fluid blood escaped through the wound. A hand was passed into the abdominal cavity, and while removing large clots, encountered a fetus lying loose and detached. It was removed and found to be about three months old. The abdomen was then thoroughly flushed with salt solution, wiped dry, and the wound retracted to give a good view of the pelvic contents. There was a mass occupying the left side of the pelvis, from which blood slowly oozed. This was firmly attached by a broad base, and every effort to detach it was followed by copious hemorrhage. The mass consisted of placenta and thickened and altered tube and broad ligament. A clamp was applied at the pelvis brim and another one at the uterus, and the entire region packed off with gauze, the ends of which came out at the lower angle of wound, the upper half of which was closed with through-and-through silkworm-gut sutures. Transfusion finished the technique. The patient rallied well, and clamps were removed the following morning. The gauze packing was removed on the fifth day, and an attempt was made to remove some of the placenta. Several fair sized pieces were picked off, when hemorrhage became so severe that clamps had to be applied and the region repacked with gauze. This process was employed from time to time, and as the placenta necrosed it came away easier and without much hemorrhage, so that in six weeks it was all removed, when the wound filled in rapidly and closed.

CASE V. A young married woman, aged thirty-three, married several years, and was never aware of being pregnant, menstruation erratic and excessive since girlhood, flowed two-thirds of the time during past six months, several months ago realized that there was a tumor in lower part of abdomen. During the week previous to admission to hospital had suffered from nausea, vomiting, pelvic pain, fever and sweating. Examination showed a large, nodular uterine fibroid, and hysterectomy was advised and agreed to. A median incision from umbilicus to pubis was made, and with much difficulty the tumorous uterus was delivered upon the abdomen. As the broad ligaments were a mass of large, venous sinuses and newly formed arteries, the difficulty of controlling hemorrhage made the operation a slow one. After the uterus was isolated down to its neck, amputation was begun, and when the cervical canal was opened, a small brown foot prolapsed into the pelvis, and amniotic fluid escaped. The canal was hastily plugged with gauze, and the amputation completed. The subsequent steps of the operation were completed as hurriedly as possible, and as oozing persisted and the patient's condition was bad, a couple of clamps were left on and the wound closed down to them, a provisional suture being left untied. Transfusion was done, and the patient gotten into bed. Next morning the clamps were removed and the suture tied. Shock was severe for several days, after which she convalesced rapidly. The uterine mass was laid open, and a small cavity was found in the right side of it containing a three months' fetus, dark brown, and partly decomposed.

CASE VI. A woman, thirty-nine years old, married, rather tall and stout, weighing 180 lb., in previous good health, was suddenly seized with violent pains in hepatic and epigastric regions, radiating under right shoulder blade. She was visiting at a farmhouse on the coast of Maine about fifteen miles distant. A local physician was called who administered morphia without relief. A physician from Portsmouth was then called in consultation and decided she was suffering from biliary colic, and in grave shock. I was telephoned for in the evening, about twelve hours after onset, to come prepared to operate. On arriving at 11 P.M., she was found collapsed from agony of pain, and operation was at once decided upon as offering the best chance of recovery. As rapidly as possible the sitting room of the farmhouse was made into an operating room, the kitchen table being pressed into use for an operating table. Three kerosene lamps were obtained, affording meager light, and a sand bag had to be dispensed with as not obtainable in reasonable time. With the local physician to give ether, and the Portsmouth consultant to assist me, a cholecystotomy for exploration of biliary passages was begun. The obesity of abdomen, together with absence of sand bag, made it necessary to use the Mayo-Robson extended incision, and even with this it was most difficult to deliver the gall bladder, though it was free from adhesions. Poor light made it practically impossible to see beyond the fundus of the gall bladder, so this was seized with tenaculum forceps and pulled up, while the index finger of right hand palpated the ducts. This detected an obstruction in the cystic duct near the neck of the gall bladder. The fundus of gall bladder was then incised, and a finger passed inside to neck, while the index finger of the other hand milked the obstruction back. Soon three small stones passed back into the gall bladder, and were removed. A searcher was then passed through cystic and common ducts freely, finding nothing. Further palpation from head of pancreas to hilum of liver revealed nothing, so it was decided that the cause of trouble had been removed. The fundus of gall bladder was stitched to parietal peritoneun, a drainage tube inserted and secured by suture, the wound sutured above and below the drainage, a gauze wick passed down to the fundus, dressings applied, and patient put to bed in a fairly good condition. There were no complications; the tube came away in a week, and the wound closed completely in about five weeks. This case illustrates what may be done in emergency under most disadvantageous circumstances.

CASE VII. A single man, aged thirty-seven, wiry build, high liver and free drinker, was seen in consultation the third day after having had violent colic with vomiting. Two weeks previously be had experienced a like attack after eating eggs and drinking a lemon squash. This attack followed similar eating and drinking, and naturally was considered the same in character, and in view of subsequent developments, the two

attacks up to a certain stage may have been alike. Saline purgatives and high enemata were recommended and close observation of the case enjoined. I may say that at this time the abdomen was flat, there was no specially tender point, and no abnormality on palpation. Temperature normal. Two days later I was called in consultation again and found conditions much worse. Well marked intestinal obstruction existed with intestinal bunching across hypogastrium. General condition fair in spite of gravity of case. He was sent at once to hospital where median section was done and rapid exploration of abdominal cavity made. General twisting of the ascending colon and ileum was found to exist, and the intestines above stricture being enormously distended, nothing could be done till an incision above the umbilicus was made and the entire mass delivered on the abdomen under hot towels. Then it was found that the ascending colon was devoid of mesentery for the first two thirds of its length, and at the ileo-cecal junction the small and large intestine had turned over and over till about half a dozen twists existed. The difficulty of unwinding this tangle was great, and after it was accomplished and the intestinal canal was free it was found that the enormous gaseous distention made it impossible to return the viscera to the cavity without evacuation of gas, and puncture of the cecum was done. This collapsed the gut, after which the wound in cecum was closed, intestine returned and abdomen closed as rapidly as possible. The patient's condition was most grave, requiring transfusion and all possible stimulation. He rallied at first and inquired particulars of his case, but collapsed from shock afterward and died in six hours.

Case VIII. A young man, twenty-six years old, presented himself for examination, declaring he had appendicitis, and thought an immediate operation was necessary. Examination revealed a linear scar along the outer border of the right rectus muscle opposite McBurney's point. Inquiry elicited the fact that he had been operated upon previously and his appendix removed. He insisted, however, that there was constant pain in the appendical region which was unbearable. There was rigidity of the abdominal muscles, and apparent pain on pressure. No tumor evident, and percussion sounds normal. It was considered probable that sensitive adhesions existed, which might be freed by operation, and the abdomen was opened parallel with the old scar. There was no appendix, the first operation having evidently disposed of it, but the cecum was bound down by dense adhesions, as was also the ileum for a short distance beyond the ileo-cecal valve. These adhesions were freed as far as possible, and the abdominal wound closed. Convalescence was rapid, and the man was out in a couple of weeks. He went to a city in an adjoining state, and in a couple of months apparently had another attack of local pain, for he called in a prominent surgeon and told him he had appendicitis and desired to be operated upon at once. What the surgeon thought upon seeing two scars upon the man's belly I never heard, but he proceeded to investigate the inside of it, and, of course, found only some adhesions. The man was soon out again, and presumably happy and contented at having had his abdomen opened three times for appendicitis. This state of contentment did not last long, for a few months afterward he turned up in a hospital in another New England city, and informed the house surgeon he had appendicitis and wanted to be operated upon without delay. The visiting surgeon after examining the abdomen and viewing the scars of many surgical combats, made a careful investigation into the history of the man, and upon finding him an operation crank declined to operate, and had him discharged from the hospital. This man undoubtedly had a monomania for abdominal section, or what might be called the operation habit, and had he not been firmly dealt with by the fourth surgeon to whom he applied, might have been still wandering from hospital to hospital, seeking inspection of his viscera, or else have died from operative interference. The rebuff he met with finally cured him, and induced him to enter the field of medicine in a legitimate manner, as he is now a general practitioner.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

(Continued from No. 15, p. 497.)

And, lastly, one should also exclude from among crimes from passion those which are merely cases of rape disguised. All these crimes cannot be considered as crimes from passion, because they are not disinterested crimes, neither are they directly caused by passion. Their motive is not love, but in reality is *amour propre*, the regret of lost habits and cupidity. It is also to be pointed out that when jurists ask for a severe sentence in all cases of crimes from passion, it is usually to these crimes from pseudo-passion that they refer.

It unfortunately happens to many men to be amorous, jealous and deceived, and when they discover it they become indignant and are pained, but the larger number silently suffer, forget or become resigned to it. Only a few revolt against the moral law by avenging themselves by crime. Nevertheless, all of them undergo the same sentiments. The indignation for the traitor, anger for the unfaithful seducer, the resentment of outraged honor in the husband and maternal love are sentiments, not only normal, but moral as well. Everyone has them under such circumstances and we all should have them. For a proof we have only to recall the esteem in which a woman indifferent to her children is held, or a husband who cares little for his honor.

Even jealousy is, without any doubt, a natural and general sentiment in man, although it is a low order of sentiment, since it is derived from egotism. The reasons why these sentiments develop in an excessive manner in certain people and become abnormal on account of their intensity are as follows, and we will examine these individuals from the standpoint of their character as well as their mental condition. The sentiment which, in the first place, seizes passionate individuals is the absence of will, and these subjects are weak. The absence of control over oneself is what characterizes these unfortunates, and is both the result and the cause of their physical and moral stigmata. For this reason it is astonishing that a psychologist as eminent as Stendhal should have considered them as energetics. The only application is in the sense that Stendhal gives to the word energy which, according to him, is the violence, the sudden blind explosion, having no design and no outcome, of a passion which cannot be either repressed or controlled. These energetics are merely impulsive subjects who are lacking in force to resist themselves. As Stuart

Mill remarked, it is less on account of the ardor of their desires that men fall into evil than from the weakness of their will. There exists a natural relationship between a passionate character and a feeble will, in this sense, that passion does not develop in those who know how to overcome it by self effort as soon as it arises. These subjects never obey other than their own will, and consequently cannot be considered passionates. On the other hand passionates are not only weak, but they are presumptuous and consequently imprudent; instead of taking the fruit, instead of putting aside a passion which will be fatal to them, the danger of which is all the greater the weaker they are, they believe that they are stronger and more skillful than others, and from this time on, they, in reality, have everything to fear. Afterwards, when suffering has taken the place of the happiness of their passion, they excite it, instead of appeasing their chagrin. It is a fire which consumes them and makes little difference to them if they die from it, but, unfortunately, they do not wish to die alone. Instead of assuming a perfect outward tranquillity, so that this calm may become real after having stimulated, they become pleased in their chagrin and love their suffering.

The best proof of this will be found in the descriptions that they all make, even the greatest, like Goethe, or Musset, of their story and their misfortunes. The worst cases are those which will not allow themselves to be cured, because the only thing in life that they care for is the sensation of their suffering. Later, when they find themselves in face of the crime and wish to retract, it is too late. As one of them said, "At one time I was perfectly free. My heart was unfettered, and nothing was easier than to separate myself from my thoughts; every one gave me this advice and I thought that I would always be sufficient master of myself, but imprudence wrecked me." It is just at this time that the responsibility should be looked for in this class of criminal although it is quite particular and social, rather than moral. Their mind is still free, the heart unfettered, but the subject, being persuaded that he is stronger and more tactful than others, throws himself in the same river in which others have been lost. With this confidence in himself it is not at all astonishing to meet with an extreme susceptibility and an immense *amour propre*.

Laffarge, the ebonist worker and the hero dear to Stendhal, when questioned regarding the motives of his crime, replied, "I wanted to avenge myself upon her, as her disdain rendered me crazy." Another subject gave better evidence as to the motive of his crime when he said, "I was too proud to submit to this affront, and honor demanded me to take revenge."

This question of honor plays a great rôle in crimes, but if a husband can feel wounded in his honor from reason of the one who bears his name, he must nevertheless have an exceptionally high opinion of himself in order to believe that he has the right to destroy a human existence from this fact. And what is still worse, it has been shown that the husband does not always have such a delicate sentiment for the honor of his hearthstone, and that the mere fear of being ridiculed occasionally makes him an assassin. This susceptibility may, as has been pointed out, go as far as ideas of persecution. To sum up this side of the character that we have just been examining we would say that the passionate is extremely personal. Jealousy, in the first place, is a proof of love, without any doubt, but ordinarily it shows more *amour propre* than love. It must be said that everything is not sacrifice of devotion in lovers, and an unconscious egotism frequently occupies a large place in their sentiments. What is not easily borne when breaking off is the happiness of the one that they leave. The lover becomes consoled when he knows that his former mistress is unhappy and, if she returns to him, he may perhaps pardon her, but if he learns that she is happy and that she loves another, his jealousy will no longer pardon her, his love changes to hatred and he wishes to take revenge.

If we now study this same criminal from passion in the physiological point of view, we will find the explanation of his character and also some little excuse for his acts. According to the great Italian criminologist, Ferry, he is physically a man possessed of a sanguine or nervous temperament, contrary to born criminals who are lymphatic subjects. This first remark abounds in proof, and Proal says in his most interesting book that "it has been observed that jealous subjects who become assassins have a red face, congestion of the brain and the eyes projecting. It is said that he sees red, because he is blinded by the blood." A witness said, speaking of a husband who had killed his wife, that "the face was violet, and one would have said that he had a congestion of the brain." In another case a witness testified that the assassin was very red in the face and in a condition that he had never seen him before, while another witness added that the assassin was so red in the face he could no longer see, because the blood blinded him.

The accused that we have mentioned were evidently of a sanguine temperament, while, on the contrary, subjects like Chambige, Soularue and Marie Bière were evidently of the nervous type, and, among the papers belonging to the first mentioned, this cry of despair is found: "*Oh ma mere, pourquoi m'avoir donne des nerfs de femme!*" Born into the world nervous and sick, these individuals could be saved by a severe moral discipline, but ordinarily everything that surrounds them simply tends to exasperate their nervous type. As Maudsley has remarked, those who have this temperament have a sort of elective affinity for subjects having the same mental qualities and the same moral tendencies, and they afterwards share the defects of character. This simply tends to develop their nervous nature, and modern life, especially in cities, is not at all calculated to calm very excitable natures.

Without speaking of that part of the population in which the uncertitude of the morrow strains

the nervous system by the uneasiness it causes, in the easy classes, the abuse of pleasures and excitement, prolonged dissipation, have rendered nervous diseases frequent. On the other hand, the ordinary necessities of life are the cause of many neuroses. The struggle for life which is all the time becoming more difficult, professional rivalry, preoccupation of business produced by an always increasing competition, produces intellectual and physical overwork which fatigues the nervous system.

For the working class one may add to these causes the vibrations of machinery, insufficient nourishment, or meals too hastily eaten, and lastly, and above all, alcoholism.

The proofs of this general neurosis are to be met with even in our pleasures, the taste for violent emotion, dangerous sports and everything that overexcites the nerves. The intelligence of neurotic subjects is in no way affected, but their will power suffers. Energy becomes an extremely rare virtue, and we more frequently meet brilliant minds than firm characters.

We have said that the criminal from passion is essentially a feeble being and, according to our way of thinking, the reason is this: If, as it has been upheld, crimes from passion have increased in number, the cause is to be looked for in the increase of nervous diseases. The physiological state of criminals often presents stigmata more serious than a disease of the nervous system, and one is struck by the large number of these criminals who show mental disease in their family antecedents. Many of them have had insane, vicious or alcoholic parents, who have a certain part of responsibility in their children's crimes. One should not assume that these indviduals are irresponsible, but merely that they are less well prepared to fight against their passions.

The question is particularly delicate, because we constantly find ourselves face to face with subjects who certainly are not sufficiently insane to be placed in an asylum and who, on the other hand, it would be difficult to call absolutely and fully responsible. To acquit them and send them back to liberty is perhaps imprudent, but, on the other hand, it is neither right nor useful to society to condemn them. It is quite possible that all criminals do not belong to families tainted with insanity, although this is met in a very large number of cases, but for all, at least, passion is a dissolvent of the will. Gall has said that all men have the germ of a monomania in the existence of a passion. This is because passion is essentially absolute and nothing exists beyond its goal. It begins by requesting, afterwards it commands and finally compels its victim to act. Although there may have been a struggle there may be a final defeat of the health. Usually, it is true, there is no struggle because the idea opposed to the passion does not even come up. The mind has been corrupted before the will, and before imposing an act the passion has obliged the idea to be admitted as just.

Among all the passions love certainly would appear to have a decided aspect of a monomania, and one of the most eminent in the study of mental disease, I refer to Dr. Paul Janet, gives it this character. He points out that everything in this passion resembles insanity in its origin, its development and mechanism. In the first place it does not depend upon the will, because "*il ne suffit pas de vouloir être amoureux*," any more than to wish to cease to be.

On the other hand, there is a period of incubation, as in all virulent disease; the idea accomplishes its underground work and only reveals itself in its full activity, like a fire which smoulders only to suddenly burst out in all its violence.

(To be continued.)

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D.,
AND
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HISTOLOGY OF THE CHANGES CAUSED BY THE RÖNTGEN RAYS IN MALIGNANT TUMORS.[1]

No one at present can deny the very favorable influence of Röntgen rays on malignant neoplasms, and especially on certain forms of cutaneous cancer. Writers are not, however, in accord as to the exact way in which the Röntgen rays act in this astonishing and quite elective manner. Some consider that the first action of the Röntgen rays is to produce a reactionary inflammation of the connective tissue, or believe that the blood vessels are damaged in the first instance. By far the greater part of the authors, however, believe that there is a primary damage of the cancer cells by the Röntgen rays. In other words, that there is a primary degeneration of the cancer cells while the inflammatory reaction is only secondary.

Marschalko's histological studies were based upon material from 4 cases, 3 cases of cutaneous epithelioma, and 1 case of multiple sarcoma, Kaposi's type. The epitheliomata represented three different types of cells, and the tumors were all examined before and after treatment with the Röntgen rays. The conclusions which he arrived at from his investigations are that soon after the beginning of treatment an intense reactionary inflammation is produced, with thickening of the epithelium, infiltration of the tissue with leucocytes, and much dilated and partially new formed vessels, swelling of the endothelial cells, partially with thickening of the intima and breaking up of the media, and with the formation of a considerable cell infiltration consisting, for the most part, of plasma cells. This cellular infiltration is soon accompanied by a connective tissue proliferation which in later stages leads to a considerable hypertrophy of the collagenous tissue with the formation of giant cells. This hypertrophy progresses from the periphery toward the center, and undoubtedly has a tendency to

[1] Von Marschalko: Arch. für Derm. und Syph., lxxxiv Band, 1-3 Heft.

bring about a walling off of the specific tumor elements.

Hand in hand with this inflammatory reaction there is also a change and degeneration of the tumor cells. In carcinoma the karyokinetic figures are very small in the parts reached by the Röntgen rays, the growth is checked, and the cancer cells undergo degeneration and necrosis.

The whole process, however, has its beginning at so early a period that it is impossible to conclude that the change of the cancer cells is only secondary and brought about by the reactionary inflammation. On the contrary, the writer's investigations tend to strengthen the belief that the cancer cells are primarily damaged by the Röntgen rays.

He does not, however, believe that the reactionary inflammation is simply a consequence of this primary damaging of the cancer cells, but believes that there is also a primary damaging of the connective tissue by the Röntgen rays, which leads to a great increase in the inflammatory infiltration and proliferation of the connective tissue. He was not able to determine whether the vessels were first and most seriously affected.

Primary damaging of the cancer cells and also of the connective tissue appear, therefore, to be quite independent of one another as the result of the action of the Röntgen rays.

The question arises whether this degeneration of the cancer cells is specific and only connected with the action of the Röntgen rays, or whether it is simply a quantitative increase of the processes of degeneration which are more or less constantly occurring in cancerous tissue. The writer inclines to the latter view.

In the later stages, at least, the reactionary inflammation appears to play an important part in breaking up the specific tumor elements. This is seen by those appearances in which the cancer nests are found surrounded by leucocytes; these press not only between the cancer cells, but partially within them. Hence he concludes that the leucocytes play an active rôle in the destruction of the cancer cells.

With regard to the sarcomata few conclusions can be drawn from his investigations, as it was not a real sarcoma, but a so-called sarcoid tumor.

With regard to the important and practical question how deep the Röntgen rays can penetrate in cancer, his investigations support those authors who believe that the action of the rays does not penetrate very deeply. His microscopical preparations show that only the more superficial masses of the tumor are destroyed at first, and even in such cases where there is apparently no carcinomatous tissue to be seen under the microscope carcinoma cells are still to be found singly in the deeper tissues. That these cells may take on a further growth is proved by one of his cases in which there was a recurrence after what was apparently complete healing and after an interval of half a year.

As to the question whether there is a difference in the different forms of cancer with respect to the action of the Röntgen rays, the writer's investigations point to the conclusion that such a difference does not exist, as all of the forms which he investigated reacted in the same way.

DIPHTHERITIC INFLAMMATION OF THE SKIN.[2]

There is very little to be found in the newer textbooks on dermatology on the subject of diphtheria of the skin. Primary diphtheria of the skin is a rare affection, meaning by this a diphtheritic lesion of the skin caused by the direct inoculation of diphtheria bacilli at the spot, and not of inoculations of the skin which are continuous with diphtheria of the mucous membrane.

Five cases of inoculation of the skin with demonstration of diphtheria bacilli were observed in the University clinic in Breslau during the 'ast year and a half. In three of these pure cultures were obtained, and their virulence proved by experiments on animals. Three of the cases from which the bacilli were obtained from pure culture were very much alike clinically. All were in children from one and one quarter to two and a half years of age, and the lesions were purely ulcers, in the beginning of very small dimensions and extremely superficial. Later they became confluent, and usually quite large. Their form was very irregular, as the edges formed polycyclical bows or deep sinuses into the normal skin. The edges were slightly infiltrated, very intensely reddened, and only here and there somewhat undermined, and they were usually pretty sharply cut out. The floor of the ulcer was covered with a grayish white, firmly adherent diphtheritic membrane. There was very little odor. After the ulcers were cleansed, there was a speedy formation of granulation, and recovery was quite rapid. These ulcers were situated especially about the abdomen, groins and genitals. In none of these cases was there any affection of the mucous membrane, nor were there any discoverable signs in the internal organs. Diphtheria serum was injected in all these cases, and they all did well, but it is questionable whether any inferences on this score can be drawn from so small a number of cases. No trace of a toxin could be found in the blood.

The fourth case is that of a child of three, in whom the affection took the form of an infantile ecthyma. The localization was a peculiar one, the larger ulcers being in the lower abdominal and inguinal region, whereas ecthyma usually affects the extensor sides of the extremities and back. The lesions began as small pustules with an inflammatory areola. In their further development, the roof of the bullæ was broken and superficial ulcerations were formed. The ulcers were rounded, the edges surrounded by a small red areola. The floor of the ulcers was covered with a yellowish covering. Diphtheria bacilli were found by staining and by culture in only one of the larger ulcerations. Pure cultures were not obtained, nor was there any result from animal inoculation.

In the fifth case, that of a man of thirty-one,

[2] Schucht: Arch. für Derm. und Syph., lxxxv Band, 1-3 Heft.

diphtheria bacilli were obtained from a deep ulcer covering the dorsum of the penis and a part of the mons veneris. Later, when the ulcer had become smaller, the spirocheta pallida was found.

The number of cases of diphtheria of the skin with the presence of Löffler's bacilli which have been reported in the last years is small. In most of the cases in which diphtheria bacilli were found there was an infection of deep wounds, abscesses and other subcutaneous infections. In these the typical diphtheria membrane is not formed, and these affections differ in no way from the pictures which can be produced by other pyogenic affections. The writer thinks that his first 3 cases are typical enough to warrant a probable diagnosis of diphtheria of the skin from clinical appearances alone, and the most characteristic appearances he considers to be the irregular form of the ulcers, the diphtheritic covering, and the localization.

LUPUS ERYTHEMATOSUS AND LUPUS VULGARIS.[3]

The writer thinks that there is sometimes a doubt between the clinical diagnosis of lupus erythematosus and lupus vulgaris. It is evident that we do not yet know all of the cutaneous manifestations of tuberculosis. Apart from the forms already recognized, such as lupus vulgaris, acute miliary tuberculosis of the skin, etc., there are a certain number of cases which surely belong to tuberculosis, or are related to it, which it is not possible to definitely classify. In the face, especially, there is a series of affections which may reach the subcutaneous cellular tissue, which belongs in this group. If lupus erythematosus and lupus vulgaris were related etiologically, it seems that the combination of the two processes would occur more frequently. In point of fact, this association is extremely rare. Even in the well-known case of Besnier and Lacavalerie, there was no histological examination.

On the question of the tubercular nature of lupus erythematosus, the dermatological world is divided, one side affirming this etiology, the other denying it. Arning believes in the tubercular origin, and bases his belief upon the frequent presence of tubercular adenitis. He has experimented with Koch's tuberculin and obtained some general reactions, such as headache, erythema, etc., but never fever or local reaction. Boeck found in 36 personal observations, signs of scrofula in two thirds of the cases, and believes in the possibility of a toxic origin. Besnier regards lupus erythematosus as tubercular in its nature, basing his conviction on the existence of intermediate clinical forms between the two types of lupus, their coexistence and the frequency of tubercular adenitis. The same arguments are used by Jeanselme and Hallopeau. Jarisch considers the cases which are regarded as combinations of the two types of lupus as errors of diagnosis. He does not deny that tuberculosis plays a part in the appearance of lupus erythematosus, but protests against the assimilation of the two affections. Kaposi protested against the unitarian theory, but declared that those who were affected with lupus erythematosus are often tuberculous, and said that he had never seen this affection in old people. Koch, in 37 cases, has seen two of pulmonary tuberculosis. Jadassohn and Neisser consider lupus erythematosus an infectious granuloma, and reject all association with tuberculosis.

The case is reported of a man of thirty-seven, who was admitted in 1896 in Kaposi's clinic, with a diagnosis of lupus erythematosus. Three years later he was admitted to Lang's clinic, with lesions on the right and left cheek. The plaque on the left cheek was sharply bounded, pigmented, and of a cicatricial appearance, covered in places with scales, and in the cicatrix there were nodules either confluent or isolated, which were unquestionably lupus vulgaris nodules. On the right cheek there was a similar lesion, cicatricial, with reddish-brown nodules on its lower border. The diagnosis was a combination of lupus erythematosus and lupus vulgaris. The lesions were excised, and microscopical examination of the plaque on the left side verified the diagnosis of lupus vulgaris. Seven months later, the patient returned to the hospital with a further development of lupus erythematosus, and some years later another outbreak was observed. Histologically the characteristics of both lupus erythematosus and lupus vulgaris were found. In two sections from the nodule of lupus vulgaris tubercle bacilli were found.

This is the third case only in the literature of this association of the two affections. It is quite possible, in view of the rarity of such observations that the association was simply a coincidence. The histological examination of this case proves conclusively the presence of tubercles of lupus vulgaris, some writers having questioned whether in cases previously reported masses of elastic fibers undergoing a colloid degeneration have not been taken for lupus nodules.

VON RECKLINGHAUSEN'S DISEASE.[4]

An interesting case of this affection occurred in a widow, forty-five years old, who came to the hospital, complaining of painful itching tumors of the skin. She said that they had first appeared when she was twelve years old, five or six in number. They were seated mostly on the trunk and steadily increased until they were very numerous. None ever disappeared spontaneously. They all gave rise to extreme itching and pricking pains. Several of the growths removed at the hospital when she was thirty years old had reappeared. Her general health had been good with the exception of fits at various times.

Upon examination it was found that the patient was very neurotic and of variable temper. She was quite thin, and the skin atrophic. Some of the tumors were pedunculated, loose and soft; others firm and obviously arising from the subcutaneous tissue. The pedunculated growth seemed to cause more itching, while the firmer ones were more tender and painful. There was

[3] Spitzer: Ann. de Derm. et Syph., March, 1907.

[4] Malcom Morris and Wilfred Fox: Brit. Jour. of Derm., April, 1907.

no pigment upon the body, as is usual in such cases.

While she was in the hospital for a period of months, there was a series of epileptiform fits, which were considered hysterical in character.

Six of the growths were excised and examined microscopically. The two varieties of growths differed considerably when they were cut open. The pedunculated growths apparently consisted of loose, fibrous tissue, while the sessile ones were gelatinous and firm. Staining by several methods showed in sections fine nerve fibers arranged in bundles between the layers of fibrous tissue. The small tumors were seen to be fibromata made up of spindle cells.

The points of interest in the case are the absence of any large pendulous tumors, the fact that apparently no large nerve trunks were involved, that only very fine fibers in the skin were involved, and the hysterical convulsions.

Reports of Societies.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION.

TENTH ANNUAL MEETING, HELD AT ATLANTIC CITY, N. J., JUNE 3 AND 4, 1907.

THE President, Dr. HENRY WALD BETTMANN, of Cincinnati, in the chair.

THE EVOLUTION OF GASTRO-ENTEROLOGY.

DR. BETTMANN, in his opening address, said the most important change in the spirit of internal medicine during the past quarter of a century had been the swinging of the center of gravity from the pathology of structure to the pathology of function. Twenty-five years ago pathological anatomy and histology were beginning to lose their force as a means of medical progress; they were becomng sterile from over-cultivation, and had ceased to reveal new truths. An entirely new point of view became absolutely essential to vitalize research, and this new point of departure was afforded by bacteriology, which in an amazingly short period became a well-organized science. At the same time, rapid advances in organic chemistry rendered possible the development of new methods of research, and chemical pathology became a fertile department. Chemistry and bacteriology had rejuvenated pathology, making it seem like a young science capable of unlimited development and growth. Every branch of internal medicine had been quickened by the change.

INCOMPLETE FORMS OF EXOPHTHALMIC GOITER IN RELATION TO GASTRO-INTESTINAL DISORDERS.

DR. J. P. SAWYER, of Cleveland, in this paper, said that gastro-intestinal processes were intimately associated with vasomotor conditions. These in turn were markedly affected by the hyperthyroidism, which at present was recognized in exophthalmic goiter. This hyperthyroidism existed in many cases which did not show the "cardinal signs." Routine examination of all cases for diagnostic recognition of disturbed vasomotor function, due to this cause, might show its existence in patients not having the symptoms of goiter of this type developed to such a degree that attention would be attracted to them in the course of an examination made without having that point in mind. It was thought to show, at least in the writer's vicinity, the greater prevalence of the disorder than was commonly noted; also, that therapeutic procedures based on special examination of stomach contents and feces might be considerably assisted by measures adopted to meet the recognized development of exophthalmic goiter. Among these measures were climate, hydrotherapy, electricity and various drugs, including the antithyroidin of Moebius, and thyroidectin. Special note was made of the effects of atmospheric conditions, particularly of relative humidity. Note was also made of certain blood findings.

DR. A. L. BENEDICT, of Buffalo, said the thyroid gland was very unstable in its functions, and especially in young girls I found all kinds of disturbances, some with goiter, some without, and in all these cases the personal equation of the examiner must not be lost sight of. The speaker referred to the comparative frequency of thyroid disturbance, not only in gastro-enterologic, but also in general, practice.

DR. J. A. LICHTY, of Pittsburg, said he had used thyroidectin in a number of cases with somewhat doubtful results. Those cases in which it apparently had most effect were young girls at about the age of beginning menstruation, with enlarged thyroids and evidences of hyperthyroidism. Many of these, doubtless, would have done equally well without the thyroidectin.

DR. J. KAUFMANN, of New York City, referred to the profuse diarrhea, which was at times the only pronounced symptom of an incomplete exophthalmic goiter, and said that instead of being due to vasomotor disturbance, as suggested by Dr. Sawyer, it was possible that it was the result of the toxins which were such a prominent factor of exophthalmic goiter, and which were perhaps excreted by the intestines. Based upon that idea, he had employed colonic irrigations in these cases with good results.

DR. I. ADLER, of New York City, said he had seen many cases of exophthalmic goiter, in which almost the only subjective symptoms were of the gastro-intestinal type. Chemical and bacteriological examinations of the urine, blood and other substances in these cases gave very variable results, and were of no practical benefit. The speaker referred to the use of rodagen in these cases. It was expensive, but those patients who were able to afford it were apparently benefited by it. It had practically the same effect as the antithyroidin of Moebius, but had the advantage of being a distinct food, and to that extent counteracted the emaciation.

DR. MAX BALLIN, of Detroit, said he treated all his cases with thyroidectin, and he could affirm what had been said regarding the efficient qualities of rodagen. He was opposed to the use of iodine in these cases, as it usually aggravated the symptoms of hyperthyroidism.

DR. SAWYER, in closing, said the ages of his patients ranged from that of children two or three years old to people advanced in years. They included both sexes. His experience with antithyroidin and thyroidectin had convinced him that the effect of these remedies was positive, but less effective when used alone than when combined with physical measures.

A NEW BLOOD TEST.

DR. MAX EINHORN, of New York City, demonstrated this method. He stated that examinations for the presence of blood have increased in significance since Boas reported the occurrence of occult blood as an almost constant symptom in carcinoma of the stomach. Usually, the aloin or guaiacum test was employed for the demonstration of the blood, and recently a new test

with benzidin had been described by O. and R. Alder. Both the guaiacum-aloin and the benzidin tests require the preparation of fresh solutions, which render them more difficult. Dr. Einhorn therefore tried to simplify the test by making a reagent paper. He prepared an aloin paper and a benzidin paper. Aloin paper was made by saturating ordinary filter paper with a solution of aloin in 70% alcohol; the benzidin paper by moistening filter paper with a saturated solution of benzidin and glacial acetic acid, and drying it. In preparing the paper, as well as in making the test, it was of importance to avoid contact with the fingers, as a drop of perspiration caused a similar reaction. In handling the paper it was best to use an ivory-tipped forceps, or protect the hand by means of a towel. Aloin paper was much inferior in sensitiveness to benzidin paper. He, therefore, recommended the latter.

CASES OF TRUE INTESTINAL DYSPEPSIA.

Dr. Max Einhorn, of New York, read this paper. He stated that by the expression "intestinal dyspepsia" we understood conditions in which the digestive function of the intestinal tract was disturbed. It was advisable to distinguish two large groups of intestinal disturbances: 1. Those which concerned all these classes of food substances, namely, albuminates, carbohydrates and fats; dyspepsia intestinalis universalis. 2. Those affecting only certain classes of food stuffs; dyspepsia intestinalis partialis. This second group might be further subdivided, according to the varieties of foods, the digestion of which was disturbed. These functional disturbances of the intestinal digestion might exist without appreciable anatomic change of the digestive apparatus, or they might be associated with lesions of that tract. The idea of testing the functions of the intestine in a similar manner as those of the stomach prevailed among clinicians for a long time, but its execution was attended with great difficulties. By means of the bead test, which Dr. Einhorn demonstrated at a meeting of the association a year ago, an approximate estimate of the work of the intestine became possible. The method was easy to apply and the results were sharply defined. By a large number of examinations, the results of which would soon be published, he had become convinced that the digestive functions of the bowels might be well judged by means of this test, and he saw no reason why it should not be utilized in the study of diseases of the bowel. In using the bead test, if we found a substance in the beads undigested, it should not be taken for granted that no digestion whatsoever of such substance might occur in the bowel. That would be wrong, for the same food stuffs in liquid form might still be well digested. We could only conclude from this test that there was a considerable diminution of the digestive power for those substances.

Dr. H. W. Bettmann, of Cincinnati, said he had used these beads in some forty instances, and the conclusions he had derived from them were very similar to those of Dr. Einhorn. In a certain number of cases where he had employed them, only the potato substance was passed unchanged, indicating a carbohydrate intestinal indigestion. Because of the simplicity of the bead test, suggested by Dr. Einhorn, it would probably eventually have a wide application.

The discussion was continued by Drs. A. L. Benedict, of Buffalo, and J. C. Johnson, of Atlanta, and was closed by Dr. Einhorn.

(To be continued.)

Book Reviews.

The Prophylaxis and Treatment of Internal Diseases. By F. Forchheimer, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio; Department of Medicine of the University of Cincinnati, etc. New York and London: D. Appleton & Co. 1906.

This book of Dr. Forchheimer fills a distinct need in American medical literature. Its scope has been limited wisely to two phases of the art and science of medicine, prophylaxis and treatment, with only a few necessary excursions into the other phases of medicine. It is a field not occupied fully by any other recent book. A book of such scope is a useful addition to the library of every practicing physician because it contains information for daily use in an accessible form. Frequent personal reference to the book during the past six months has proven it to be of much value, and on these grounds it is recommended rather than on the basis of a hurried review.

Most of the therapeutic suggestions receive the approval or disapproval of the author because in his own experience they have shown themselves useful or not. In fact, comparatively little of the work is based on other than first hand knowledge, though due credit is always given to the originator of every procedure. Methods not sufficiently tried by the author are given, however, with the opinion of some good authority as to their value. It is not to be expected that the reader will concur in all that is said, and a number of the reader's pet modes of treatment may be undescribed or subjected to adverse criticism. However, treatment based on the directions of this book will be rationally conservative and form a most excellent foundation from which, with experience and cautious experiment, the practitioner can gradually develop an efficacious therapy satisfactory to himself.

The general arrangement of the subject matter is excellent. In places, however, there is a distinct lack of smoothness of diction which detracts from an otherwise satisfactory book. Fortunately this is more evident in the preface than elsewhere — though to find it in the first few pages brings it with undue force to the attention of the critic. In a number of places through the book, there is an uncertainty of meaning which does not disappear on close analysis of the sentences. This results from a somewhat loose use of pronouns which might refer to one of several things, and the occasional heading of a paragraph in a way suggestive of a division of the subject into several parts, whereas in fact no such sub-division is carried out.

Rather more mistakes in spelling and use of words occur than should. The very frequent use of the active form, as "is doing," "is making," in place of the passive form "is being done," "is being made," jars on the ear. These, however, are minor defects to be righted in subsequent editions, and do not seriously detract from the

value and usefulness of a book which presents so many good features. The list of drugs given at the back of the book does not contain a number referred to in the text. This is inconvenient as it necessitates reference to some other book. Some bibliography in the opinion of the reviewer would be an addition to a book in which various authors are so frequently quoted.

However, we understand that the demand for the book has been such as already to require a new edition, in which these minor changes can be made. No change in the make-up of the book will be needed so far as the publishers are concerned.

Cancer of the Rectum, Its Surgical Treatment, with an Appendix of 380 cases; Jacksonian Prize Essay. Fifth edition. By HARRISON CRIPPS, F.R.C.S., Senior Surgeon to St. Bartholomew's Hospital, etc. London: J. & A. Churchill. 1907.

This is a fifth edition, published thirty-one years after the first writing of that Jacksonian Prize Essay.

Readers familiar with surgical writing of the present generation know this work of Mr. Cripps', which has become almost a classic within the author's lifetime. The book, as now presented, contains 255 pages with 13 beautiful plates, and tables of cases filling 66 pages. It seems needless at this time of day to review again this well-known book. Mr. Cripps has rewritten the entire manuscript, introducing the best thought on recent investigations of the pathology, differential diagnosis and treatment of rectal cancer. We commend the book cordially to surgeons and to thoughtful students.

The Care of the Baby. By J. P. CROZER GRIFFITH, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Fourth revised edition. 12mo of 455 pages, illustrated. Philadelphia and London: W. B. Saunders Comapany. 1907.

This little book, which is now, as it has been in the past, one of the best of its class, has been thoroughly revised and brought up to date. An appendix, dealing with the principles of infant feeding both in health and disease, and giving a number of formulæ, has been added for the use of those parents for who some reason are thrown upon their own resources in this matter. We agree with the author, however, that these directions and formulæ should never be made use of except under these conditions, and that otherwise the feeding, both in health and disease, should be directed by a competent physician.

Gallstones and Diseases of the Bile-Ducts. By J. Bland-Sutton, F.R.C.S., Eng., Surgeon and Lecturer on Surgery to the Middlesex Hospital, etc. With 47 illustrations. New York: William Wood and Co. 1907.

Any book from the pen of this distinguished author deserves consideration, and though the little 200-page monograph before us is unpretentious we commend it cordially to students or practitioners who look for a brief, interesting and readable presentation of cholelithiasis, to intelligent practitioners, perhaps, rather than to students, for students concern themselves little with interesting books.

Bland-Sutton gives us eighteen short chapters, and deals in a pleasantly familiar way with the anatomy, physiology, pathology and surgical treatment of the bile passages. He gives the average reader all he can care to know, while one finds in the book various descriptions and dissertations on some of the more unusual aspects of bile passage disease.

The book is unpretentious, is well printed, is illustrated in a somewhat antique fashion and is comfortably small.

Woman. A Treatise on the Normal and Pathological Emotions of Feminine Love. By BERNARD S. TALMEY, M.D., Gynecologist to the Metropolitan Hospital and Dispensary, New York. For Physicians and Students of Medicine. 228 pages, flexible covers, with 22 drawings in the text. New York: The Stanley Press Corporation. 1906.

The author of this book explains in the preface that the medical student is not instructed as to the normal sexual emotions by his professors or by his textbooks, and sets himself the difficult task of filling in this gap in the medical curriculum. It has not occurred to him, apparently, that the subject should be approached reverently by one endowed with a wide training, not only in gynecology, but in ethics as well. Love is regarded as synonymous with passion, an affair of the flesh solely; therefore, the book, although containing a certain amount of valuable information, and planned with the best intentions, is distinctly nasty. There is a lot of pomposity in the use of Latin terms, a great many headlines, and noted authors are paraded freely. The following extract from the end of Chapter 38 gives a pretty good idea of the character of the work: "While in libido the entire body is in a state of sexual excitement. This general excitement depends upon the irritation of the fibers of the sympathetic nerves. The irritation spreads over the entire extent of the vasomotoric system. Hence, with every sexual excitement ensues an irritation of the vasomotoric system. The result is a great turgor of the genitals and an increased turgescence of all organs accessible to an objective examination. The general turgescence is seen in the injection of the conjunctiva, the prominence of the bulbi of the eyes, enlargement of the pupilla to almost twice its normal size and palpitation of the heart, which is caused by the paralyzation of the vasomotoric nerves coming from the sympatheticus of the neck. The coronary arteries become thus widened, and the muscles of the heart hyperemic, hence an increased excitation of the ganglia of the heart ensues."

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INTERNATIONAL CONGRESS ON TUBERCULOSIS.

A preliminary announcement of the International Congress on Tuberculosis, to be held in Washington from Sept. 31 to Oct. 12, has been published. The cosmopolitan character of this congress is forthwith manifest from the fact that the text is printed in four languages: German, French, Spanish and English. This meeting will no doubt be the most important that America has yet seen in regard to the tuberculosis problem. The Federal Government has shown a decided interest in the aims of the congress, and seven of the government departments have petitioned the United States Congress for the authority and means to participate in its deliberations, these departments being the Departments of State, of the Treasury, of War, of the Navy, of the Interior, of Agriculture and of Commerce and Labor. The whole question of tuberculosis has so far outgrown the attention merely of the medical profession, and has become a national problem of such wide significance that this action on the part of the Government is in no way surprising. In addition to the Federal Government, the governors of individual states have been notified of the congress, and most of them have taken official action in consequence. In fact, all the agencies in the United States which directly or indirectly come in contact with the tuberculosis problem have been invited to offer their contributions to the general fund of knowledge which the congress will provide.

The congress will be divided into seven sections: first, pathology and bacteriology, under the presidency of Dr. William H. Welch, of Baltimore; second, clinical study and therapy of tuberculosis, sanatoria, hospitals and dispensaries, under the presidency of Dr. Vincent Y. Bowditch, of Boston; third, surgery and orthopedics, under the presidency of Dr. William J. Mayo, of Rochester, Minn.; fourth, tuberculosis in children, etiology, prevention and treatment, under the presidency of Dr. Abraham Jacobi, of New York; fifth, hygienic, social, industrial and economic aspects of tuberculosis, under the presidency of Mr. Edward T. Devine, of New York; sixth, state and municipal control of tuberculosis, under the presidency of Surgeon-General Walter Wyman, of Washington; and, finally, tuberculosis in animals and its relations to man, under the presidency of Dr. Leonard Pearson, of Philadelphia.

During the three weeks of the sessions a tuberculosis exhibition will be open and lectures by distinguished investigators will be held, together with various clinics and demonstrations. The success of tuberculosis exhibitions is already assured as a means of education, and this one, in connection with the International Congress, will no doubt be more elaborate in detail than any hitherto held. Literature will be widely distributed, and matters illustrative of the disease will be gathered from all parts of the civilized world. In order still further to insure the success of the exhibition, the committee has decided to award testimonials to meritorious exhibits. For example, three cash prizes of one thousand dollars each will be given and several other awards of smaller value.

It is intended to publish papers announced in the official program previous to their presentation before the congress. These papers, printed in four languages, will be distributed on the day they are read. It is estimated that the final publication of the work of the congress will amount to four volumes, each of about two thousand pages.

It is hoped and expected that this congress will bring together men interested in the universal scourge of tuberculosis from every part of the world, and it is certainly not to be questioned that their deliberations will be of value as summing up our present knowledge of means of prophylaxis and treatment. In this connection it is interesting to look back twenty years and legitimate to congratulate ourselves upon the enormous progress made in combating an affection which we now know could only be successfully accomplished by combined effort.

BOSTON DIRECTORY OF CHARITABLE ORGANIZATIONS.

THIS volume, bearing the full title, "Boston Directory of Charitable and Beneficent Organizations," published by the Associated Charities of Boston, is of so great value to the medical profession that we are glad to call attention to it in these columns. The first edition of this directory was published in 1880, and contained but 182 pages of text as contrasted with the 500 of this last, fifth edition. This great enlargement of the volume is evidence, not only of the general growth of the city, but also of the special development of its various agencies of a charitable character.

We speak of the directory particularly because of our desire to call the attention of the medical profession to the information it contains bearing directly on their work. Many physicians are so completely occupied with the details of their professional work that they find small opportunity to investigate the various charitable organizations with which this or any other great city is filled. If this knowledge were more widespread, there is no doubt that many puzzling problems which present themselves to active practitioners regarding the proper disposition of cases would be easily solved. The procedure necessary, for example, in dealing with the insane, or others demanding the care of the city, will be found detailed in this admirable volume, succinctly and in convenient form for reference.

Further than this a section is given over to legal suggestions in which the rights of individuals and the duties of the city in relation to the poor, illegitimate children, boarding of infants, paupers and similar matters are clearly stated. These are evidently matters about which every physician practising in a large community should know, and which, if known, he would undoubtedly find a great help in that part of his practice which deals with the unfortunate poor. A further matter of importance is a summary of the more important laws applying to dwellings in the city. In this department the organization of the health department is discussed and its duties defined. The significance of the term "nuisance," which often bears very closely on matters of health, is laid down in definite form. Garbage, drainage, infectious diseases, overcrowding, building permits, air spaces, — all these and many other analogous matters are gathered together in small compass and so arranged as to be exceedingly easy of reference. The main portion of the volume is taken up with a well arranged list and description of all reputable charitable institutions in the city, although the Directory does not assume any special knowledge of the character of these institutions, beyond the fact that they are being legitimately conducted.

We have no hesitation in cordially recommending this book to the medical profession as a valuable directory and also as a means of explicit information on a great variety of subjects with which every physician must be brought more or less into contact. As the physician enters more and more into the social life of the community in which he lives, and takes a larger share in its problems, it is evident that the need of such a directory as this of the Associated Charities will be increasingly manifest.

REPORT OF THE SURGEON-GENERAL OF THE ARMY.

THE report of the Surgeon-General of the Army to the Secretary of War for the fiscal year ending June 30, 1907, is a pamphlet of 183 pages containing many interesting facts regarding the medical conditions of the United States Army, together with the usual statistics and figures illustrative of the rise and fall of various diseases. As we have repeatedly had occasion to say, the careful tabulation of statistics regarding disease in the army, if carried out each year by the same system, must throw much light finally on the fundamental problems of the sanitation of large bodies of men. For example, it appears that malarial diseases have steadily increased in the army since 1904, a fact which has led to an investigation of the cause. Although it is now recognized that effective screening against mosquitoes is an important preventive measure, nothing has been accomplished in this regard in the Philippine Islands. Certain hospitals are absolutely without screens, and when this became known, a recommendation was forthwith made that adequate screening be provided to exclude mosquitoes. This example of apparent flagrant neglect of an ordinary precautionary measure was clearly brought to light by the unexplained increase of malarial fever. The same naturally applies to other conditions. In general, we commend this report to the careful inspection of all health officers and those engaged particularly in sanitary problems. The amount of information compressed into small compass is so great, and much of it is so significant for problems of sanitation and prophylaxis, that it will well repay careful study. Naturally, the extension of our domain into tropical countries increases the scope of this report to a very great degree.

A NEW CLINICAL JOURNAL.

We have received within a few days the first number of a new medical journal, entitled *The Quarterly Journal of Medicine*, printed at the Clarendon Press, Oxford, and also obtainable in London, New York and Toronto. The following names appear on the editorial board: William Osler, J. Rose Bradford, A. E. Garrod, R. Hutchison, H. D. Roleston and W. Hale White, with the collaboration of twenty-five other distinguished practitioners. So far as one may judge from this first volume, the journal is to be devoted to medicine rather than to surgery, a need which is apparent in the English-speaking countries. There are thirteen contributions to this number by such men as Byrom Bramwell, Robert Hutchison, William Osler and G. A. Gibson. The articles for the most part are much more than mere clinical reports of cases, and represent painstaking laboratory research. It is particularly to be hoped that the future numbers of the journal may continue to insist upon the intimate relationship existing between the clinic and the laboratory, and that the journal may therefore stand as a completely adequate representative of medicine from the broadest standpoint. There is small doubt that this policy will be followed, judging from the men who are responsible for the publication. In form the journal is dignified and entirely satisfactory. It is liberally illustrated, two plates being in colors and many others printed on special paper. Altogether, both in form and substance, the journal starts on its career with every prospect of success, at least on the literary side. It is announced that a number will be issued once in three months after the manner of the chief English neurological publication, *Brain*. We wish the journal all success.

MEDICAL NOTES.

Cholera in Russia. — It is reported that cholera is spreading in Russia.

Death of Dr. Eduard Hitzig. — In the death of Dr. Eduard Hitzig, Emeritus Professor of Psychiatry in the University of Halle, the world loses an indefatigable worker on the subtle problems of brain physiology. Professor Hitzig has long been a prominent figure in German medicine. He reached the age of seventy years.

Endowment for a Hospital. — By the will of the late Miss Anna T. Jeanes about $5,000,000 is said to have been left for public purposes, among others the establishing of a hospital. A large bequest was made to Swarthmore College conditional upon the abandonment of intercollegiate sports. The decision of the board of managers has not yet been made public.

Entering Medical Classes. — It is stated that the entering medical class at McGill University is smaller than usual, attributable probably to an increase in the requirements and to the fire which destroyed one of the most important buildings. The entering class at the Harvard Medical School is this year somewhat larger than for several years previously. A considerable number of those coming to this school for the first time this year have applied for advanced standing.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 16, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 43, scarlatina 40, typhoid fever 23, measles 4, tuberculosis 30, smallpox 0.

The death-rate of the reported deaths for the week ending Oct. 16, 1907, was 19.51.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 12, 1907, was 212, against 178 the corresponding week of last year, showing an increase of 34 deaths and making the death-rate for the week 18.14. Of this number 112 were males and 100 were females; 207 were white and 5 colored; 138 were born in the United States, 66 in foreign countries and 8 unknown; 44 were of American parentage, 135 of foreign parentage and 33 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 35 cases and 3 deaths; scarlatina, 38 cases and 0 deaths; typhoid fever, 27 cases and 1 death; measles, 6 cases and 0 deaths; tuberculosis, 35 cases and 13 deaths; smallpox, 0 case and 0 deaths. The deaths from pneumonia were 16, whooping cough 1, heart disease 30, bronchitis 1 and marasmus 14. There were 11 deaths from violent causes. The number of children who died under one year was 65; the number under five years, 79. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 79.

There were 4 cases and 1 death reported from cerebrospinal meningitis during the week.

Nurses in the Boston Schools. — Although the new system of school nurses has been in use but a short time, results are apparent. As the principal of one school expressed it, "The nurses

are supplying the medium between the school and the home." It is said that the chief difficulty which the nurses encounter in the prosecution of their work is the ignorance of parents. This is not surprising in view of the limited intelligence of many with whom the schools and the nurses come immediately into contact.

Children's Clinic at Consumptives' Out-Patient Department. — Within a few days the first clinic for children at the Boston consumptives's out-patient department has been held. Twenty presented themselves, but none were found with positive symptoms of the disease. One object of this out-patient department is to discover the disease at the very earliest time, and in general to do missionary work regarding fresh air and good food, even if signs of the disease have not actually appeared. A gratifying amount of work has already been accomplished by this addition to the city's means of combating tuberculosis.

Ether Day at the Massachusetts General Hospital. — As has been the custom for some years past, Oct. 16 was celebrated at the Massachusetts General Hospital as "Ether Day," being the sixty-first anniversary of the surgical use of ether as an anesthetic. Nurses were invited to visit the hospital on this occasion; in the afternoon lantern slides were shown in the lower amphitheater of the Out-Patient building, and tea was served in the old operating room in the dome of the Bulfinch Building. The recently completed orthopedic ward was also thrown open for inspection.

NEW YORK.

College of Physicians and Surgeons. — At a meeting of the trustees of Columbia University held Oct. 7, Marcellus Hartley Dodge was elected a member of the Board of Trustees to fill the vacancy caused by the death of Dr. George E. Wheelock, and Dr. Robert F. Weir and Charles McBurney, professors of clinical surgery, were made Emeritus Professors of Surgery. The following gifts to the medical department were announced: from Bernard M. Baruch, $5,000 for the Vanderbilt Clinic, and from Mrs. George E. Wheelock, $5,000 as a fund in memory of her late husband, the income to be applied to the service of the Department of Physiology.

School of Catholic Women's Association. — The School of the Catholic Women's Association of Brooklyn has just entered upon its twelfth season. It was inaugurated by the rector of St. Augustine's Church, in the interest of the young women of his parish, whose education had been neglected, and it has gradually extended its work throughout the diocese. The association is now a branch of the State University, and among the subjects taught is nursing. The course in nursing is for young women over twenty years of age, who cannot spare the time to take a regular hospital course for trained nurses. It comprises lectures five days in the week by competent physicians, and practical lessons by a masseuse and dietitian, with instruction in cooking for invalids. At the end of twelve weeks candidates are thoroughly examined, and if they pass satisfactorily are given a certificate, which entitles them to enter upon work immediately as Nazarene nurses. After six months' practice these nurses are given a diploma and qualified to take cases for which a trained nurse is not specifically required. It is now four years since this system was instituted, and, on account of their comparatively low fees and their efficiency, the demand for these Nazarene nurses has become so great that it can scarcely be met by the graduates. They do not pose as trained hospital nurses, but in many cases are recommended by physicians in their stead.

Reduction in Death-Rate. — The weekly reports of the Health Department show a gratifying reduction of the death-rate, both as regards August and the month of September last year. The mortalityin the city during September represented an annual death-rate of 16.62, as against 20.12 in the month of August and 17.88 in September, 1906. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from measles decreased from 13.5 in August to 4.75 in September; the weekly average from whooping-cough, from 15.75 to 6.25; from diphtheria and croup, from 23.25 to 21.5; from pulmonary tuberculosis, from 148.25 to 142.75; from broncho-pneumonia, from 87 to 59.75; from diarrheal diseases, from 440.75 to 252; from diarrheals under five years of age, from 414.5 to 233.5; from cancer, from 64.75 to 57.75; and from Bright's disease and acute nephritis, from 104.25 to 87.75. Among the few diseases in which there was an augmented mortality were the following: The weekly average of deaths from typhoid fever increased from 16.25 to 19; from lobar pneumonia, from 51.25 to 56; from apoplexy, congestion and softening of the brain, from 41.5 to 45.75; from organic heart diseases, from 114 to 121; and from cirrhosis of the liver, from 17.5 to 20.5.

Current Literature.

Medical Record.

Sept. 21, 1907.

1. Richardson, H. *The Hepatic Functions, Their Pathology and Treatment.*
2. Coburn, E. B. *Advantages and Disadvantages of Simple Extraction of Cataract.*
3. Flint, C. P. *The Operative Treatment of Fractures Involving the Elbow Joint.*
4. Krall, G. H. *The Administration of Proteids in Tuberculosis.*
5. Harvey, T. W. *A Case of Very Large Dilatation of the Cecum.*

New York Medical Journal.

Sept. 21, 1907.

1. Cumston, C. G. *A Case of Facial Paralysis.*
2. Benedict, F. G. *Metabolism during Inanition.*
3. *Pancoast, H. K. *The Advantages and Limitations of the X-Ray in the Treatment of Surgical Tuberculosis.*
4. McPhedran, A. *The Natural Course of Disease.*
5. Potts, B. H. *Report of a Case of Septic Meningo-encephalitis or Cerebritis.*
6. Ullman, J. *Nephroptosis.*
7. Karpas, M. J. *Juvenile Paresis, with a Report of One Case.*
8. Welker, W. H. *A Contribution to Our Knowledge of the Effect of Urinary Preservatives on Urinary Analysis.*

3. The x-ray probably has no direct effect on the tubercle bacillus, either inhibitive or bactericidal. The action is that of stimulation of the surrounding tissues. In lupus vulgaris Pancoast finds the x-ray a specific. In this disease the x-ray has supplanted surgery, which is to be regarded only as an adjunct. In other tubercular conditions, the x-ray is to be used only in connection with other treatment. The writer reports good results with x-ray in tuberculous adenitis, laryngitis, peritonitis, cystitis and orchitis. He thinks it may be of some value in phthisis. He has seen no good results in the treatment of bone and joint tuberculosis with the x-ray.

[R. I. L.]

The Journal of the American Medical Association.

Sept. 21, 1907.

1. Bouvée, J. W. *The Status of the Fight against Cancer of the Uterus.*
2. Montgomery, E. E. *How Can We Lessen the Mortality of Uterine Cancer?*
3. Marvel, E. *Prevention of Peritoneal Adhesions by Adrenal Salt Solution, with Special Reference to the Pelvis.*
4. Ochsner, A. J. *Practical Points of Economy in Hospital Construction.*
5. Thompson, W. G. *Modern Hospital Construction.*
6. Pedersen, V. C. *An Inhaler for the Ordinary Sequences and Mixtures of Anesthetics. On the Principle of Unobstructed Respiration.*
7. *McClure, R. D. *An Experimental Study of Intestinal Obstruction.*
8. Martin, F. *Post-operative Ileus.*
9. Bull, W. T., and Coley, W. B. *Report of Two Thousand Operations for the Radical Cure of Hernia.*
10. *Hatcher, R. A. *Cactus Grandiflorus and Cactin or Cactina.*
11. Stone, I. S. *Salpingitis Caused by Appendicitis.*

7. McClure isolated in animals a loop of bowel, closing the ends, and at the same time restored the continuity of the bowel by an anastomosis of the free ends. The animals all died within a few days with symptoms similar to intestinal obstruction. This suggests that the symptoms of obstruction are due to intoxication from the confined intestinal contents. The writer produced chronic obstruction by reversing a portion of bowel. The animals showed no severe symptoms, but became progressively emaciated. Autopsy after several months showed a distention of the intestine greater than in most cases of acute obstruction.

10. Hatcher finds that the "cactina pillets" of the Drug Company and the cardiac tonic (cactin) of the Sultan Abbott Alkaloidal Company are inert when used on animals in doses that are even thousands of times as large as those recommended by their exploiters. [R. I. L.]

Annals of Surgery.

September, 1907.

1. *Crile, G. *The Technique of Direct Transfusion of Blood.*
2. Torrance, G. *Arteriovenous Anastomosis.*
3. *Munro, J. C. *Ligation of the Ductus Arteriosus.*
4. *Stewart, F. T. *Arteriotomy for Thrombosis and Embolism.*
5. Sweet, J. E. *Technique of Blood Vessel Suture.*
6. Frazier, C. H. *Endo-Aneurysmorrhaphy.* (*Matas.*)
7. Gibbon, J. H. *Endo-Aneurysmorrhaphy.* (*Matas.*)
8. *Watts, S. H. *The Suture of Blood Vessels. Implantation and Transplantation of Vessels and Organs.*
9. *Tilton, B. T. *The Operative Treatment of Acute Abscess of the Lung.*
10. Weil, R. *Concerning a Distinct Type of Hypernephroma of the Kidney, which Simulates Various Cystic Conditions of That Organ.*
11. *Watson, F. S. *The Extension of the Field of Treatment of Certain Renal and Vesical Conditions That is Made Available by a New Contrivance for Long Continued or Permanent Drainage of the Kidneys through Renal Fistula in the Loin.*
12. Watson, F. S. *Certain Aspects of Calculous Anuria with Especial Reference to the Performance of Bilateral Nephrolithotomy Simultaneously in Some Cases of This Condition.*
13. Walker, G. *A New Combined Lithotrite with Cystoscope.*
14. Jacobson, A. C. *A Telephonic Searcher for Use in the Bladder.*
15. *Ladd, W. E., and Osgood, G. *"Gauze-Ether" or a Modified Drop-Method, with its Effect on Acetonuria.*

1. Crile describes his method of direct transfusion of blood by the aid of a specially devised tube, which allows him to place intima against intima, and thus avoid clotting. In the human, transfusion is made between the radial artery of the donor and a superficial vein of the recipient. The blood should be introduced very slowly, and the anastomosis continually protected from the air by constant application of warm salt solution. The blood lost by the donor is regained in from four to five days. His experience is based on 225 animal experiments, and 32 clinical cases.

3. Munro suggests that in cases of babies in whom the ductus arteriosus has failed to close, this vessel may be ligated by surgical intervention. He has demonstrated the feasibility of such ligations on the cadaver. The difficulty of diagnosis of the condition, however, makes its practical application problematical at present.

4. Stewart believes that the opening of an artery to remove either a thrombus or embolus can be readily performed without danger of secondary hemorrhage. Such a procedure is particularly indicated when the intima is smooth. It should be performed as soon as possible after the arterial obstruction develops. Even though the vessel again becomes obstructed with clot, this may form slowly, and give the collateral vessels a chance to dilate.

8. Watts gives a very careful résumé of all the literature on the suture of blood vessels, including its application to transplantation of vessels and organs. From a large amount of experimental material, he concludes that completely divided vessels can be sutured with almost uniform success, when the aseptic technique is perfect. In making the suture, he uses the method of Carrel. The vessel's ends are first united by three interrupted stitches, equally distant from each other on its circumference, and penetrating all the coats. By traction upon these guide stitches, the edges of the vessel are approximated and a continuous suture applied. The material used was silk, boiled in vaseline. All instrumental handling of the ends of the vessels is to be avoided. Out of 31 experiments upon the vessels of the neck, 28 were successful.

9. Tilton reports 20 operative cases of abscess of the lung occurring at the Bellevue Hospital. The mortality was 50%. Cases of lobar pneumonia running an irregular course, suggesting secondary empyema, should be regarded with suspicion. In such cases, he advises exploration by resection of one or more ribs; palpation and inspection of the pleura; search for an adherent area, and trial punctures of the lung through the adherent portion. Should there be no evidences of adhesion between the visceral and parietal pleura, he advises suture of these two membranes, so as to bring about such adhesions. If the suture has been done satisfactorily, the incision of the pleura can be done at once, without being put off until a second sitting. If, however, the patient's condition is good, the delay of a couple of days will doubtless insure stronger adhesions. In making a diagnosis of lung abscess, the x-ray is often of value.

11. Watson proposes the simultaneous performance of bilateral nephrostomy, tying off both ureters, and at the same time establishing permanent renal fistulæ in the loin, thus wholly diverting the entrance of all urine into the bladder. This can be done (1) as a palliative measure for cases of inoperable tumor of the bladder, as well as in cases of tuberculosis of the bladder, originating in the kidneys; (2) as a preliminary step toward total extirpation of the bladder. The apparatus which he has devised to insure permanent drainage from the renal fistula is composed of (1) a hard rubber cup-shaped shield, through which the tube that drains the cavity is passed; (2) a light metal receptacle into which the urine is conveyed; (3) a rubber tube at the bottom of the receptacle by which it is emptied; (4) elastic belts passing around the body, by which the shield and receptacle are held in place. Good illustrations of this device are given. In two instances, the writer has used it with entire success.

15. Ladd and Osgood, in examining the urine of 120 cases after etherization, found acetone present in 88.5%. These cases were all etherized with a cone, or by the semi-open method. Ether anesthesia produced by a modified drop method, using a plain pad of gauze over the the patient's mouth and nose, was followed by acetonuria in but 26%. They describe the method of etherization as follows: A square pad of gauze, twelve layers thick, and large enough to cover the patient's mouth and nose, is laid directly on his face. Ether is then dropped on this gauze by means of a drop bottle. In about a minute, a similar pad is laid on the first, and the rapidity of the drops increased. The ether should never be poured on in large quantities. The average time needed to produce complete anesthesia is about five minutes. The average amount of ether necessary is about 7 oz. per hour. It is also claimed by the writers that this method is less disagreeable to the patient, that post-operative vomiting is much less frequently seen, and that recovery of consciousness occurs more quickly than after the closed methods of administering ether. [W. C. Q.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.
AUGUST, 1907.

1. *HAMMAN, L. *A Brief Report of the First Two Years' Work in the Phipps Dispensary for Tuberculosis of the Johns Hopkins Hospital.*
2. *HAZEN, H. H. *The Home Factor in Tuberculosis. A Study of Tuberculous Families.*
3. *HAMMAN, L., AND WOLMAN, S. *The Early Diagnosis of Pulmonary Tuberculosis.*
4. FLICK, L. F. *The Crusade against Tuberculosis.*
5. JACOBS, H. B. *The Tuberculosis Situation in Maryland.*
6. *BLOODGOOD, J. C. *Intestinal Obstruction.*
7. POHLMAN, A. G. *The Purple Island of Phineas Fletcher.*

1. Hamman describes the development and work of the Phipps dispensary, and gives statistics of results. The main function of the dispensary is held to be the prevention of the spread of the disease by means of popular education. In carrying this out much stress is laid upon the importance of the work of the nurses in securing continued adherence to the principles of treatment. A list of 700 patients is being visited. The effect of this in prophylaxis cannot fail to be great. Secondary to the prophylactic aims, but with increasing attention, the treatment of individual patients has been undertaken in a total of 1,474 cases, treated mainly by direction of the dispensary under supervision of the nurses. A small number were treated by the class method. The symptoms and results are briefly analyzed. Of 498 cases of pulmonary tuberculosis followed from eight to twenty-six months 16.4% are now improved, 14.3% unchanged, 18% worse and 51.27% dead.

2. Hazen has studied 83 families, of which one or more members were tuberculous, to obtain evidence as to the frequency of the transmission of infection to other members of the family. In two thirds of the cases a diseased parent had infected one or more children. Of cases where a husband or a wife had tuberculosis the consort developed the disease in 43%. Of the children exposed to parental infection 38% contracted tuberculosis. Of the 254 members of these families only three of those not in contact with their families developed the disease.

3. Hamman and Wolman discuss the diagnosis of pulmonary tuberculosis with special reference to the tuberculin reaction. They urge the greatest possible care in consideration of symptoms, physical signs and sputum examination, but in cases where these create suspicion, but fail to establish the presence of tuberculosis, they rely upon the diagnostic use of tuberculin, beginning with a dose of one fifth of a milligram, repeated three or four times, then doses of 1, 5, and 10 mgm.; temperature constitutional symptoms and local reaction manifested by changes in the local signs must be considered. A negative reaction gives positive proof of the absence of tuberculosis. A positive reaction must not be regarded conclusive, but is of value as a bit of evidence in addition to the symptoms and physical signs.

6. Bloodgood describes the condition of intestinal obstruction in two forms: strangulation ileus where in addition to obstruction there is interference with blood supply, and obturation ileus where the blood supply is not disturbed. In both of these surgical treatment should be applied, if possible, within the first twenty-four hours, but in the strangulated form there is special danger in delay. Fortunately, in this form the symptoms of onset are more acute and characteristic. The symptoms due to interference with circulation are pain (probably due to pull on the mesentery), peritoneal shock, and reflex vomiting. The obstructive symptoms, fecal vomiting and distention occur later and should not be waited for in diagnosis. The severity of the shock is greater than in appendicitis, gallstones or renal calculus, a point which is of value in diagnosis. The patient is pale with rapid pulse and feeling of weakness "as if he had keen kicked in the abdomen." The local tenderness and spasm of appendicitis and cholecystitis are absent, but there is a general rigidity of the abdominal muscles. Occasionally a distended loop of intestines can be palpated, externally or by vagina or rectum, and when this is present it is pathognomonic. Peristalsis may be made out in certain cases. A leukocytosis is constantly present. In obturation ileus the acute primary symptoms are frequently absent, but there is often a history of previous constipation and colic, and frequently of previous attacks of obstruction. Vomiting may be absent but the constipation and distention must be regarded as suspicious. Visible peristalsis is a constant early symptom where the small intestine is the seat of the obstruction, but the distention is much less than where the obstruction is lower. For the general practitioner it is to be emphasized that the diagnosis of any intestinal obstruction should be made early, and that cathartics by mouth and morphia are to be avoided; the stomach should be washed out and enemata given. In operation chloroform is the best anesthetic. In desperate cases a simple colostomy under cocaine is indicated. [F. W. P.]

THE LANCET.
SEPT. 21, 1907.

1. *PATERSON, H. J. *The Operation of Gastro-jejunostomy and its Physiological Effect.*
2. IWAI, T. *Relation of Polymastia to Multiparous Birth*
3. *HARRISON, E. H. *Mucous Colitis.*

4. Nash, J. T. C. *Notes on, and Remarks Suggested by, a Case of Malignant Endocarditis (Diphtheritic) with Terminal Cerebrospinal Symptoms.*
5. Higgens, C. *Case of Double Optic Neuritis; Symptoms of Cerebellar Tumour; Complete Recovery.*
6. Dawson, J. B. *A Case of Land Scurvy Occurring in a Patient after a Prolonged Period as an In-patient in a Hospital and as a Complication of a Fistula in Ano.*
7. Seligmann, C. G., and Sambon, L. W. *Preliminary Note on a Leucocytozo-on Found in the Blood of the Red Grouse (Lagopus Scoticus).*
8. Jones, E. *The Clinical Significance of Allochiria.*
9. Mackie, F. P. *A Preliminary Note on Bombay Spirillæ Fever.*

1. Paterson, while admitting that both bile and pancreatic secretion must find their way into the stomach after the operation of gastro-jejunostomy, thinks that it is distinctly beneficial, and that some of the good results noted after this has been done for gastric ulcer are due to the alkaline fluid bathing the ulcer. There is also a marked diminution of the total acid secreted by the stomach, due not only to partial neutralization by the pancreatic fluid but to an actual decrease in the chlorides. He does not agree with many others who believe that gastric digestion is entirely done away with after this operation. Beneficial results after this operation are not due to drainage, but to the diminished acidity which allows healing of the ulcer. Many writers believe that such a radical change in the abdominal anatomy cannot be made without bad results on the metabolism. Paterson does not agree with this view, and reports experiments he has made confirming his theory.

3. Harrison gives a careful summary of the various views on the subject of mucous colitis. He dwells especially on the disorders of a more or less neurotic nature associated with it, such as asthma, disturbances of the female pelvic organs, and appendicitis. This latter may be part of the colitis, in which case operation will not cure the disease in the colon, or else it is a true appendicitis preceding the attack of colitis; in which case operation often relieves all symptoms. The evidence points to the conclusion that this disease is a pure neurosis, either secretory or motor. He goes over the symptomatology in detail, especially that cardinal symptom — pain. The patient should be kept in bed and carefully watched for some time. During the attack castor oil in large doses is indicated, enemata of various kinds and colon irrigations of warm water. In the intervals general measures to relieve the constipation, and to reduce all nervous irritation should be employed. [J. B. H.]

British Medical Journal.
Sept. 21, 1907.

1. Craig, J. *Clinical Remarks on Medical Cases Demonstrated in the Meath Hospital, Dublin.*
2. Weaver, A. E. R. *A Case of Bradycardia with Epileptoid Attacks.*
3. Handley, W. S. *An Operation for Embolus.*
4. Tweedie, A. R. *Aneurysm of the Foot.*
5. Symmers, W. St. C., and Wilson, W. J. *Epidemic Cerebrospinal Meningitis with Typhoid Agglutinins in the Blood.*
6. Leary, T. G. S., and Ellis, C. *A Case of Aneurysm of the Abdominal Aorta without Symptoms.*
7. Inglis, H. M., and Fenwick, P. C. *A Case of Cerebellar Hemorrhage.*
8. *Power, D'A. Howard, R., and Dixon, W. E. *A Discussion on Diseases and Displacements of the Testicle.*
9. Edington, G. H. *Some Malformations of the Penis.*
10. *Nitch, C. A. R. *Pneumococcic Arthritis in Children with a Report of Two Cases.*
11. Voelcker, A. F., Sikes, A. W., Stephenson, S., and Thompson, T. *A Discussion on Acute Nephritis in Children and its Results.*
12. Buzzard, E. F., Batten, F. E., and Forbes, J. G. *A Discussion on Lumbar Puncture: Its Diagnostic and Therapeutic Value.*
13. Langdon-Down, R. L. *Precocious Development.*
14. Guthrie, L. G. *Precocity in Relation to the Ductless and Accessory Genital Glands.*
15. *Kelynack, T. N. *The Care of Tuberculous Children.*

8. Power briefly considers the diseases of the testicle under the headings of tuberculosis, syphilis, teratomata, malignant disease, acute torsion of the cord, hydrocele and undescended testicle. In the latter case if the testicle lies in the femoral region or in the groin he invariably removes it. Howard goes over exactly the same ground in a similar way. Dixon considers the subject from the point of view of organo-therapy and discusses the literature of the subject of an internal secretion from the testes and its physiological effects. He believes that there is a very close physiological connection between the adrenal glands and the testes.

10. Nitch reports two cases of pneumococcic arthritis in children, and considers the subject in general. The prognosis is grave, the mortality being 50% in children. The treatment is essentially surgical, though vaccines in early cases should be tried.

15. Kelynack believes that pulmonary tuberculosis in children is far commoner than supposed, and deplores the lack of interest shown in this subject. He gives statistics of English examiners and Grancher's figures among Paris school children showing that 2% to 3% of children had open tuberculosis and 16% to 18% closed tuberculosis. The most important part of treatment is prophylactic. All children of tuberculous parents or who have been exposed to tuberculosis should have special surroundings and training; removal of these children from their homes into the country, forest schools, etc., are measures which should be imitated. France has 6,000 beds for consumptive children; England, 500. Special sanatoria are needed; those planned for adults will not do. He hopes soon to see established a national society for the study and care of tuberculous children. [J. B. H.]

Münchener Medizinische Wochenschrift. No. 32.
Aug. 6, 1907.

1. *Fischler. *The Sucess and the Dangers of Alcohol Injections in Neuritis and Neuralgia.*
2. Küster. *Eczema Following the Continuous Bath.*
3. Wiens. *A New Method of Blood Culture.*
4. Leybreth, L. *Contribution to the Literature of Tumors of the Bladder in Anilin Workers.*
5. Wyss, M. O. *Theory of the Action of "Scharlachöl" Injections in Causing Carcinoma-like Growths.*
6. *Fraenkel, E. *A Case of Congenital Syphilis of the Intestine.*
7. Schumacher. *Severe Streptococcus Conjunctivitis Simulating a Diphtheritic Infection Following Measles.*
8. Danziger, F. *Vaccinia Generalisata.*
9. Pasch, E. *Foreign Bodies in the Nose Resulting from Trauma.*
10. Bernhard, O. *Remarks on the Radical Operation for Inguinal Hernia.*
11. Bretschneider, A. *Findings in the Blood of Neurasthenics.*
12. Aufrecht. *The Treatment of Delirium Tremens.*
13. His, W. *A New Apparatus for Determining the Viscosity of the Blood.*
14. Wiesner, B. *Improved Method of X-Ray Examination in Stomach Cases.*
15. Neustätter, O. *Some Facts Interesting to Physicians Gathered during a Mediterranean Voyage.*

1. Fischler has treated 15 cases of neuritis and neuralgia with Schlösser's method of alcohol injection. The injection is made directly into the nerve, 70% alcohol being used, and the place for injection being usually the point tenderest on pressure. Out of 12 cases of sciatica thus treated, 4 were completely cured, 4 much relieved, in 3 no relief was obtained, and in 1 case, though the pain was relieved, a complete paralysis of the deep peroneal nerve ensued; 3 cases of trigeminus neuralgia were cured. In 3 cases treated by Erb in his private practice, though pain was relieved, more or less complete paralysis followed the injections. The author concludes that while this procedure is often of great value, it is in many cases dangerous.

6. Fraenkel reports the case of a premature baby born

of a syphilitic mother, who five days after birth died, with symptoms of general peritonitis. The autopsy showed an old chronic peritonitis, which must have occurred during intra-uterine life, and a fresh purulent peritonitis. In the gut numerous small deep ulcers were found, which the author considers as the starting point of the peritoneal processes. Histological examination of the ulcerated areas revealed great numbers of the spirocheta pallida, occurring in the walls of the ulcer, in the capillaries of the submucosa, and in the muscular layers. In a zone about the ulcers the mucous glands of the mucosa were everywhere filled with spirochetes. Though no other manifestations of syphilis were to be demonstrated the author considers these ulcers to be of syphilitic origin. Such a condition is extremely rare. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 30. JULY 29, 1907.

1. *MEYER, E. *Examination of the Nervous System of Syphilitic Patients.*
2. BRIEGER, L., AND KRAUSE, M. *Contribution on the Concentration of Immune Bodies in Diphtheria Serum.*
3. PICK, L. *Spermatocystitis Due to the Meningococcus.* (Continued article.)
4. *PERITZ, G. *Neuralgia and Myalgia.*
5. ROLHSCHUH, E. *"Family" Syphilis in Central America.*
6. COHN, M. *The Results of X-Ray Examination in Fracture of the Elbow.*

1. Meyer reviews the observations of Jolly and others on the appearance of functional and organic nervous disorders in the secondary and early tertiary stages of syphilis. He reports the results of careful examinations of 61 cases in the early secondary stage and 11 in the early tertiary. Out of 61, only 3 gave evidence of functional conditions developing after the infection; in 9, pre-existing functional disturbances were increased in intensity; in one half the cases a markedly increased irritability of the nervous system was to be demonstrated. Organic nerve lesions were found in only 5 out of the 61. Jolly's "Syphilitic neurasthenia" was not seen in any case. Out of the 11 patients with tertiary syphilis, in only 3 was organic disease of the nervous system found; in one a pre-existing hysteria had increased. The author concludes that early nerve disturbance, whether functional or organic, is extremely rare. In 30 syphilitics the spinal fluid was examined; 19 showed a more or less marked lymphocytosis, and 15 a pathologic albumin content. No connection between these findings and the clinical manifestations of nerve disorders could be discovered.

4. Myalgia and neuralgia are much abused terms, Peritz claims, also numerous cases of the above diseases pass unrecognized under the name of rheumatism, heart disease, etc. Though no pathologic changes can be demonstrated, each has a definite set of symptoms. Pain is the foremost complaint; in neuralgia it is referred to the nerve affected, occurs periodically, and is accompanied by tender points over the nerve. In myalgia, the pain is referred to a muscle, usually near its tendinous insertion, or at its thinnest part. Tender points occur also in myalgia, but are usually much larger than in neuralgia. A most characteristic symptom is, that over the affected muscle the skin is hyperesthetic to pin prick and to the faradic current. The introduction of a needle into the affected muscle, the skin being previously cocainized, causes acute pain. The author has found that 0.2% salt solution injected into the tender points of the muscle will usually relieve the pain. Many cases of simple "myalgia" over the precordia have led to a diagnosis of angina, pseudo-angina, or cardiac neurosis. [R. D.]

ZEITSCHRIFT FÜR KLINISCHE MEDIZIN. Bd. 63, Hft. 1–4.

FESTSCHRIFT HERRN PROF. DR. S. E. HENSCHEN.

1. *FORSSNER, G., AND SJÖVALL, E. *Poliomyelitis acuta, with a Contribution to the Knowledge of Neuronophages.*
2. *KÖSTER, H. *Two Cases of Diagnosed and Operated Tumor of the Spinal Meninges.*
3. *JUNDELL, I. *Vaccine Fever.*
4. *BORELIUS, J. *The Diagnosis and Treatment of Subcutaneous Traumatic Rupture of the Spleen.*
5. PETTERSSON, A. *Anthrax Immunity and the Bactericidal Substances of the Leucocytes (Endolysins).*
6. PETRÉN, K., AND BERGMARK, G. *Disturbances of Sensibility during and after Herpes Zoster; a Contribution to the Knowledge of the Distribution of the Nerves of Cutaneous Sense.*
7. *HENSCHEN, F. *Serous Cysts and Partial Defects of the Cerebellum.*
8. TILLGREN, J: *A Rare Case of Ependymitis of the Fourth Ventricle with Granulation Tissue and Giant Cells.*
9. *DAHLÉN, B. *A Case of Aortic Aneurism with Rupture into the Left Auricle; Some Remarks on Aortic Aneurism, Fibrous Aortitis and Syphilis.*
10. *JACOBAEUS, H. C. *A Case of Lymph Gland Tuberculosis Presenting the Picture of Pseudoleukemia, and its Treatment with X-Rays.*
11. HEDRÉN, G. *An Amyloid Tumor of the Bone Marrow.*
12. RYSTEDT, G. *A Case of Solitary Tubercle of the Cord with Incidental So-Called Heterotopia of the Spinal Cord Substance.*
13. *LENNANDER, K. G., AND NYSTRÖM, G. *A Casuistic Contribution to the Knowledge of Peritonitis Arising from Enteritis.*
14. *HEDENIUS, I. *Banti's Disease.*
15. KLING, C. A. *Spinal Cord Tumors and Cavity Formation in the Spinal Cord.*
16. *PETTERSSON, O. V. *Are Books Used by Patients with Pulmonary Tuberculosis Infected with Tubercle Bacilli?*
17. WICKMAN, I. *The Prognosis of Acute Poliomyelitis and Etiologically Related Diseases.*
18. HULTGREN, E. O. *Bibliographica Henscheniana.*

1. Forssner and Sjövall describe 2 very acute cases of poliomyelitis in which the most interesting finding is the occurrence of a very active phagocytosis by cells which invaded the ganglion cells. The ganglion cells appear to be injured, to degenerate, and then their remains are removed by a process of phagocytosis. This is a new observation in poliomyelitis, but the authors think that it is a common process which has hitherto escaped notice because the cases come to autopsy too late after the onset of the disease. They discuss also the problem as to whether the primary lesion is interstitial or parenchymatous and whether there is a causal relation between the two. They arrive at no very definite conclusion, but incline to the view that the interstitial is the earlier lesion and that the two arise independently from the same toxic cause.

2. Köster describes two cases of tumor of the spinal cord meninges almost solely from the point of view of symptomatology.

3. A detailed study of the temperature curves of infants to show the effect of vaccination. One hundred and fifty infants were studied and numerous illustrative temperature curves are given in this paper.

4. The report of one case of traumatic rupture of the spleen successfully operated upon, with a study of the blood changes over a period of two and one half months.

7. A detailed study of one case of cerebellar cyst with an extensive review and analysis of other reported cases.

9. This paper contains a detailed study of 22 cases of aortic aneurism.

10. Jacobaeus describes a case of a man of twenty who for three years had had a diffuse glandular swelling of one side of the neck with almost no constitutional symptoms. It was considered a case of pseudoleukemia and received x-ray treatment. After eleven exposures superficial ulceration developed. This slowly healed, leaving the glandular enlargement much less. Several months later marked splenic enlargement was noted. Exposure of the splenic region to the x-ray resulted in a marked decrease in size of spleen. Eventually the case died with symptoms of miliary tuberculosis of lungs and meninges. Autopsy and histologic examination showed a tubercular process in lymph glands, spleen, etc. Jacobaeus regards the case as primarily tuberculous. The good result of

x-ray treatment, contrary to the experience of many, he considers due to the fact that the tuberculous lesion was in large part a lymphocytic proliferation. Cases in which the change is mainly caseous or endothelial and connective tissue proliferation would be little affected by the x-ray, since its destructive action is chiefly on lymphocytes and leucocytes. This according to Jacobaeus explains the discrepant reports on the value of x-ray treatment in glandular tuberculosis.

13. Lennander and Nyström on a basis of 14 observed cases discuss peritonitis following enteritis. They distinguish the condition from septic peritonitis clinically by the much less marked constitutional and local symptoms. At operation they find sometimes purulent exudation, more often serous, which they believe in many cases to be either sterile or to contain very few bacteria. The lower intestine usually contains solid fecal matter, and some portion of the upper, varying in extent, shows congestion, hemorrhage and edema,— the primary local lesion. There is no demonstrable perforation. Many cases give no antecedent cause, others appear to follow dietary indiscretions. Prognosis is quite good after exploratory operation and exclusion of perforation or septic focus. After-treatment consists of rigid gastro-intestinal rest.

14. A single case is reported to show that the symptom-complex of Banti's disease may occur in conditions in which the pathological-anatomical changes in no wise resemble those described for Banti's disease. Syphilitic cases of this type have been reported. This case of Hedenius is interpreted to be a case of cirrhosis of the liver with very early, simple hyperplasia of the spleen. Hedenius thinks that the diagnosis Banti's disease should be carefully limited, and that at present it is undoubtedly too widely applied so as to include many cases that do not properly belong to this group.

16. Pettersson points out that very little attention has been paid to books as possible vehicles for the transmission of tuberculosis. Can tubercle bacilli be transmitted by books used by the tuberculous? He answers the question in the affirmative as the result of his investigations. He examined history sheets from a tuberculosis sanatorium by washing their surface with water and a brush and then sedimenting the water and examining the sediment microscopically. Of 10 histories examined 4 gave positive results. Of the 4 positive, 2 had lain on a table by the patient's bed, 2 had hung at the head of the bed. Of the 6 negative, 4 had lain on a table in the center of the room and 2 had hung at the head of the bed. There was no evidence that flies had served as carriers of the bacilli. Pettersson thinks that in coughing the bacilli are expelled in droplets of moisture (Flügge's Schleimtröpfchen theory) and so reach the sheets.

The larger part of this Festschrift consists of case reports, chiefly of neurological interest. They are not well adapted for review but the titles indicate fairly well their contents.

[H. A. C.]

Correspondence.

LETTER FROM LONDON.

[From our Special Correspondent.]

MONCKTON COPEMAN AND CANCER. THE HOSPITALS AND PHYSICAL REMEDIAL MEASURES. DR. DRESCHFELD.

LONDON, Sept. 4, 1907.

Mr. Editor: In 1905, Monckton Copeman, and Wilson Hake published in the *Lancet* the results of some determinations of the amount of physiologically active hydrochloric acid in the stomachs of normal mice and of mice suffering from cancer experimentally produced. Their estimations, which were made from stomach tissues plus contents, showed an *increase* of HCl, amounting in some cases to 50%, in the cancer cases, both where the tumor had ulcerated and where it had not. In a recent lecture these authors have offered some additional statistics, and remarks. They find that the increase of HCl is demonstrable in the stomach contents alone in almost the same degree as in tissues plus contents. Bashford explains the apparent divergence from the results of Benjamin Moore and others in human cancer, by suggesting that the increase corresponds to the needs of "mouse plus tumor" which often exceeds double the weight of a mouse alone; he draws a further deduction, *viz.*, that the conditions of growth of cancer are to be distinguished sharply from those of its origin. The investigators are now engaged upon the estimation of HCl in the stomachs of mice, the subjects of spontaneous cancer. Lazarus-Barlow does not consider that Jensen's tumor is a carcinoma at all, and Copeman admits that it is not biologically comparable. The lecturers naturally voiced the growing tendency to seek the conditions favorable to the origin and growth of cancer in disturbed metabolism; they correlate the observations of Moore as to the increased alkalinity of the blood-plasma in cancer and of Loeb as to the increase of cell growth, and the determination of pathological nuclear divisions in many of the lower organisms occasioned by increased alkalinity. Further, they call upon the work of Pawlow and Starling which has shown the extreme delicacy of the chemical relationship between the various digestive secretions, initiated by the gastric HCl, for an explanation of the cachexia and general bodily illness of many cancer patients. Copeman is making use of Metchnikoff's "lactic acid milk," the living bacilli of which rapidly supplant the normal bacterial inhabitants of the intestine, as a therapeutic measure. As a possible explanation of the action of trypsin in cancer Copeman suggests — basing his opinion on Fronin's observation that the injection of succus entericus induces a great flow of the intestinal juice — that the injection of the trypsin induces a flow of pancreatic juice which the deficiency of gastric HCl had hitherto left unstimulated, and that therefore great improvement of general body metabolism results and is quickly reflected in the cessation of growth, or actual retrogression observed in the tumor.

Hitherto, in London, we have left the exploitation of the fashionable methods of remedial gymnastics and physical exercises to quacks, for the most part; at any rate, we have had no departments in our large teaching hospitals either for the practice of the treatment or for the instruction of students. One of the many ill effects of this negligence has been that many, perhaps the majority of, practitioners do not know enough even of the technical terms of massage to be able to give proper instructions to a masseuse. Obviously, too, they cannot employ the measures to the full advantage, and it unfortunately results that a good deal of treatment is carried out apart from medical inspection at all. It is not that the staffs of the hospitals do not appreciate the possibilities and the scope of the treatment, but in most of the institutions considerations of space have precluded the organization of such departments. St. Thomas's Hospital has set the example, however, and the others will not be slow to follow.

By the death of Dr. Dreschfeld, of Manchester, the north of England loses perhaps the most distinguished of her physicians. Commencing life in this country with almost every handicap of physique, of speech (for in the early days his English was decidedly "broken") and of having to make his way as an "alien" in a city by no means free from a taint of bigotry, Dreschfeld attained not only financial prosperity, but also in an extraordinary degree the confidence, the admiration and the esteem of the profession in Manchester, in Great Britain, and in the wider field abroad. It is related of the time when he first entered Owen's College that he had to put up with a good deal of chaff from his fellow-students by reason of his foreign accent; the laugh was upon his side at the end of the first session when he carried off the prize for English.

His memory was prodigious, his reading encyclopedic, his industry enormous; distinguishing himself first as a physiologist, he secured the chair of pathology and later that of medicine in the University of Manchester. A first-rate clinician, a pathologist of great acumen and experience, a lecturer of great power despite a poor delivery, it is very hard to see where Manchester, already mourning the loss of Dr. "Tom" Harris within the last twelve months, will find a worthy successor to Professor Dreschfeld.

C.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCT. 5, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,362	494	Quincy	6	2
Chicago	565	197	Waltham	7	2
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	2	1
Baltimore	202	69	Brookline	4	1
Cleveland	—	—	North Adams	5	2
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton	3	0
Cincinnati	—	—	Medford	2	1
Milwaukee	—	—	Beverly	4	—
Washington	—	—	Leominster	3	1
Providence	56	14	Hyde Park	3	1
Boston	207	85	Melrose	4	1
Worcester	37	10	Newburyport	—	—
Fall River	49	31	Woburn	4	—
Cambridge	26	10	Marlboro	—	—
Lowell	53	19	Westfield	4	3
Lynn	20	3	Peabody	—	—
New Bedford	31	21	Revere	3	1
Springfield	12	3	Attleboro	1	0
Lawrence	24	10	Clinton	8	3
Somerville	14	5	Adams	3	2
Holyoke	19	12	Gardner	2	1
Brockton	17	6	Milford	—	—
Malden	6	2	Watertown	4	2
Chelsea	17	8	Plymouth	—	—
Salem	16	5	Weymouth	3	1
Newton	9	3	Framingham	4	1
Haverhill	13	3	Southbridge	3	3
Fitchburg	6	3	Wakefield	—	—
Everett	8	2	Webster	—	—
Taunton	12	0			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED OCT. 2, 1907.

MEAD, F. W., surgeon. Granted leave of absence for twenty-eight days from Sept. 10, 1907. Aug. 30, 1907.

BAHRENBURG, L. P. H., passed assistant surgeon. Granted leave of absence for seven days from Oct. 4, 1907, under paragraph 191, Service regulations.

LONG, J. D., passed assistant surgeon. Relieved from duty at San Francisco and directed to report to Passed Assistant Surgeon Rupert Blue for special temporary duty. Sept. 28, 1907.

CREEL, R. H., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Creel in February, 1907, for one month, revoked.

BROOKS, S. P., acting assistant surgeon. Granted leave of absence for thirty days from Sept. 25, 1907. Sept. 27, 1907.

CURLEY, C. P., acting assistant surgeon. Granted leave of absence for eight days. Sept. 30, 1907.

DUNN, J., acting assistant surgeon. Granted leave of absence for thirty days from Oct. 8, 1907. Sept. 27, 1907.

HUME, LEA, acting assistant surgeon. Granted extension of leave of absence for nine days. Sept. 30, 1907.

MARSH, W. H., acting assistant surgeon. Granted leave of absence for ten days from Oct. 11, 1907. Sept. 27, 1907.

TUTTLE, JAY, acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Tuttle for sixteen days from Sept. 16, 1907, amended to be effective Oct. 3, 1907. Oct. 2, 1907.

THORNTON, M. J., acting assistant surgeon. Granted three days' leave of absence on account of sickness from Sept. 20, 1907, to Sept. 27, 1907.

THORNTON, M. J., acting assistant surgeon. Granted leave of absence for thirty days from Oct. 5, 1907. Oct. 2, 1907.

WELDON, W. A., acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Weldon for one month from Sept. 10, 1907, revoked. Sept. 30, 1907.

BOARDS CONVENED.

Under date of Sept. 28, 1907, boards of medical officers were convened, as follows, for the purpose of conducting medical examinations of candidates for appointment as cadet-engineer in the Revenue-Cutter Service, the examinations to be held Oct. 1, 1907:

At Newport News, Va., Assistant Surgeon G. L. Collins, Chairman; Acting Assistant Surgeon A. C. Jones, Recorder.

At Boston, Mass., Surgeon R. M. Woodward, Chairman; Assistant Surgeon T. W. Salmon, Recorder.

At Philadelphia, Pa., Surgeon J. M. Gassaway, Chairman; Passed Assistant Surgeon T. Clark, Recorder.

A board of medical officers was convened to meet at Baltimore, Md., Sept. 30, 1907, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the Board: Surgeon L. L. Williams, Chairman; Passed Assistant Surgeon J. T. Burkhalter, Recorder. Sept. 28, 1907.

A board of medical officers was convened to meet at Chicago, Ill., Oct. 2, 1907, for the physical examination of candidates for appointment as cadets in the Revenue-Cutter Service. Detail for the Board: Surgeon G. B. Young, Chairman; Passed Assistant Surgeon B. S. Warren, Recorder. Sept. 28, 1907.

A board of medical officers was convened to meet at Cleveland, Ohio, Oct. 4, 1907, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the Board: Passed Assistant Surgeon H. S. Mathewson, Chairman; Acting Assistant Surgeon W. A. Baird, Recorder. Oct. 2, 1907.

SOCIETY NOTICE.

THE NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — This Society will hold its regular meeting at Hotel Nottingham, Thursday, Oct. 17, 1907, at 7.30 P.M. Pediatric Section. Dr. Marion Nute, chairman. 1. (a) Dosage of Antitoxin and the Serum Reactions; (b) Some Unusual Sequelæ of Scarlet Fever. Dr. Mary S. Holmes, Worcester Isolation Hospital. 2. Observations on the Recent Problems of Infant Feeding. Dr. Edith Hale. 3. Report of a Case of Syphilis in an Infant Infected in Utero in Seventh Month. Dr. Marion Nute. General Discussion.

DR. BLANCHE A. DENIG, *Secretary*.

RECENT DEATHS.

JONATHAN JASON SMITH, M.D., M.M.S.S., died in Boston, Oct. 8, 1907, aged seventy years.

DR. VALENTINE MANAHAN, of Enfield, N. H., died Oct. 15, in that town, at the age of eighty-one. He was graduated from the Jefferson Medical College of Philadelphia, and was widely known throughout the state, in which he had practiced for upwards of fifty years.

BOOKS AND PAMPHLETS RECEIVED.

A Text-Book on the Practice of Medicine. For Students and Practitioners. By James Magoffin French, A.M., M.D. Third revised edition. Illustrated. New York: William Wood & Co. 1907.

Petite Chirurgie et Pratiques Spéciales Courantes. Par P. Souhèyran et P. Ardin-Delteil. Illustrated. Montpellier: Coulet et Fils. Paris: Masson et Cie. 1908.

Tropical Diseases. A Manual of the Diseases of Warm Climates. By Sir Patrick Manson, K.C.M.G., M.D., LL.D. (Aberd.). Fourth edition. Illustrated. New York: William Wood & Co. 1907.

The Pancreas. Its Surgery and Pathology. By A. W. Mayo Robson, D.Sc. (Leeds), F.R.C.S. (Eng.), and P. J. Cammidge, M.B. (Lond.), D.P.H. (Camb.). Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Proceedings of the American Medico-Psychological Association at the Sixty-second Annual Meeting held in Boston, Mass., June 12-15, 1906.

A Graphic Method in Practical Dietetics. By Irving Fisher, Ph.D. Reprint.

A New Method for Indicating Food Values. By Irving Fisher. Reprint.

Transactions of the Maine Medical Association. Vol. XVI, Part I. 1907.

The Diagnosis and Treatment of Diseases of Women. By Harry Sturgeon Crossen, M.D. Illustrated. St. Louis: C. V. Mosby Medical Book and Publishing Co. 1907.

OCT 26 1907

Original Articles.

THE ROENTGEN RAY IN PEDIATRICS.*

BY THOMAS M. ROTCH, M.D., BOSTON.

ALTHOUGH the use of the Roentgen method has for some time been recognized as an important addition to our knowledge of disease, especially of the bones, yet its use in our routine work among children has been comparatively limited, especially in the so-called medical cases.

The value of the Roentgen method in children can best be tested by a systematic study of cases in the wards of a children's hospital, where each case can be kept under observation continually from the beginning to the end of the disease, and where all the other methods of diagnosis and treatment are at our command, in the hands of experts connected with the hospital equipment. In a hospital also there arises no question of expense to the patient or consent of the parents. The hospital physician is free to use his wards and the hospital facilities as a clinical laboratory, unbiased by anything but the good of the patient. Such a clinical laboratory, thoroughly equipped through the wisdom, liberality and humane foresight for accomplishing the greatest amount of benefit for the patients, has been placed at the command of the physicians and surgeons connected with the Children's Hospital by the managers, and it is my good fortune to have had rare opportunities for expert study in the medical wards under my charge. This opportunity has been greatly enhanced in value by the generous aid given me by my colleagues on both the surgical and the medical sides of the hospital, — aid which can only be appreciated when we consider how closely the diseases of young children are interwoven in medicine and in surgery, — beginning, perhaps, as a surgical trauma and ending with a general septicemia; beginning with a tubercular infection of the hip-joint and ending with terminal infection of the meninges; beginning with a pneumococcus infection of the lung and ending with an infection of the pleura or peritoneum; beginning with obscure pains in the joints, which would naturally make the parents think of rheumatism and so send for a physician, and ending with a rapidly developing osteomyelitis rendering operative interference imperative; beginning, again, with a subperiosteal hemorrhage, with symptoms such as would lead to surgical advice, and before the true scorbutic and medical aspect of the case has been recognized, terminating in destruction of bone and surrounding tissue.

For the complete study, then, of an individual child, a combination of expert medical, surgical, pathological, bacteriological and chemical knowledge is required, with all that a hospital gives in expert work on the blood, the spinal fluid, the feces, the urine, and, in young children, most important of all, the ear and naso-pharynx.

As one of the primary aids to diagnosis, and often alone determining the treatment in both medical and surgical cases, the Roentgen method of examination is rapidly taking its place, not only in rank with all the others, but in many cases proving the expert physical examinations to be wrong, and influencing the resulting lines of treatment to so great a degree that to diagnosticate and treat without this proof of the correctness of the diagnosis has in many cases proved to be foolhardy, dangerous and without excuse.

The knowledge obtained from the Roentgen ray, although at present confined to certain specific conditions, is continually widening; and it is well for the medical profession to recognize this fact and to assist in still further establishing its position among the instruments of precision to aid us, and in encouraging the perfection of its technic.

There are three chief objects to be borne in view if we are to make a systematic study of the Roentgen method among children. First, the technic should be carried out by experts who have been thoroughly trained for this work, and in whose hands a failure to make a successful plate is reduced to a minimum. The reason for this is that children are so restless and difficult to take that it is much more important than in adults to have the first plate successful. Experts, also, who understand the temperaments of children and possess the faculty of managing them quickly and successfully. This necessity can only be appreciated by watching the work as it is done in the Roentgenological laboratories of a children's hospital. Experts from long experience can make their work uniform by placing the tube at a uniform standard distance from the object taken, and the object in a uniform position and standard angle. This is especially necessary when we come to compare the normal anatomy of the part taken with disease of the same part, and emphasizes the fact that the use of the Roentgen apparatus in the hands of the practitioner in general almost invariably ends in imperfect and inexact results, and results which tend to throw discredit on the Roentgen method.

Second in importance is the full, intelligent and expert interpretation of the plate. Although this seems at first sight so simple, so easy to accomplish, namely, to look at a picture and see what one sees, yet in the present state of our knowledge the result, when a number of physicians are examining a plate, is liable to be as many opinions, as so often happens when a number of opinions are given on an obscure cardiac murmur. Even the expert has not begun to learn what can be seen and will be seen when the interpretation of plates in the future has been further developed by broader experience and by careful comparison with post-mortem findings. For the picture is there, and all that we have to learn is to determine the language and learn to read it. I have, for instance, had some Roentgenographs taken to determine the presence or absence of an infantile pyloric stenosis, and yet expert knowledge has failed as yet to read these plates, although the

* Read at the annual meeting of The Massachusetts Medical Society, June 12, 1907.

picture is directly and plainly before our eyes. We should then appreciate of what vast importance for future diagnosis is the perfection of interpretation. This can, of course, only be accomplished by those who are continually working, studying and devoting many hours a day to this work in a children's hospital, where a large number of cases can be kept under daily observation, and the clinical course and results of an especial case compared with plates showing the progress of the disease. Great progress can be made in this way in the interpretation of pleural and pericardial effusions, pulmonary solidifications and the rapid changes which are so common in the degrees of cardiac dilatation in young children.

So much impressed have I been, when following up my clinical examination, with the ever increasing expert interpretations of the same cases by the Roentgen method in the hands of Dr. Arial W. George, our hospital Roentgenologist, that I have become much shaken in the confidence which I formerly had that I was making a correct diagnosis by means of my physical examination. Cases of pericardial effusion, which would have been tapped but for the negative findings of the Roentgenograph, not infrequently arise, and these cases cannot all be accounted for by my individual incapacity and lack of skill in physical diagnosis, as in each case I have had as controls the opinions of other examiners whose knowledge and skill are acknowledged to be trustworthy. Of very great and unquestioned value, therefore, is the aid given now by technically good plates and expert interpretation; and of vast importance in the future, when this method of differential diagnosis is perfected, will be the routine use of the Roentgen ray in the hands of expert Roentgenologists.

The third object of importance to which I have alluded is a branch of special work which I have been engaged in during the past year at the Children's Hospital. This work is to give the normal living anatomy of infancy and childhood, showing the development of the organs and bones at successive periods, with short intervals as of months in infancy and with the intervals in childhood of a length which will be practically useful. Besides showing the changes taking place in all the organs during their growth by months and years they show us the changes so intimately connected with growth in height that it is only a wonder that a complete series of these changes was not tabulated long ago.

The bones in this series show at what age and period of development the centers of ossification and the epiphyses begin to develop, and the gradual increase until fully developed. The idea of the series is that, during the active period of development from infant to child and child to adult, there are so many varieties under normal conditions that it becomes exceedingly important to have pictures which shall show the different stages. For instance, it is not only necessary for intelligent diagnosis and treatment to recognize diseased conditions, but to be able to compare the diseased conditions of a certain age with those of normal development which would be present at that age. Such a series, as, for instance, in rachitis, enables the physician to recognize what conditions would be expected at certain stages of the disease by eliminating normal conditions; also the surgeon as to how far the normal conditions, according to the age, should aid in indicating when to operate and to what extent, by keeping in view such conditions. In order to show more clearly the ever-changing epiphyses and centers of ossification, I have had some of my plates reproduced for lantern pictures, but it must be understood that these pictures only represent an exceeding small number of the changes which I have found necessary to tabulate, in order that they can be of practical use to the practitioner, who at any time in a special case may need a particular stage of development to compare with the development of the age he is treating, for the purpose of exact diagnosis, and who will not be satisfied with too long intervals in the plates. It is also to be noted that the pictures on the plates are far more clear than are these reproductions.

Following out the idea of first having a series of normal anatomy to compare with diseased conditions of the same period of development, I have begun the series with the picture of a premature infant. In these normal pictures we have taken, as representing a normal condition, the average of a number of children who, according to a standard of normal external conditions, such as weight, height, development of the teeth, fontanelles and general health, could be taken as representing the normal condition at that age. In order to do this we need at least four or five pictures of the same normal external development to decide upon which picture would be most practical for the use of the physician and the surgeon, and this we have accomplished in this series.[1]

When we have become familiar with the living normal anatomy of the different parts at the different stages of development, we can, by knowing where to turn for reference in a complete series of plates, or by memorizing these plates, use them as letters of our alphabet, and can, with a proper interpretation of these plates, learn to recognize the living pathological anatomy of such cases.

The series of pictures which I have just shown are simply examples of what the series will represent when completed, for in the short time at my command it would be impossible to describe the many phases and daily changes which, in even a few cases, are needed to intelligently understand and treat a special case.

The Roentgen method of examination assists and does not replace other methods of examination. Over and over again, however, it corrects and controls an otherwise faulty diagnosis and makes possible a study of the living anatomy and pathology of the different periods of life. In pediatrics I have found it of inestimable value, for the wonderful recuperative power which exists

[1] When this paper was read I exhibited fifty lantern slides which, for want of space only, do not appear in this printed paper.

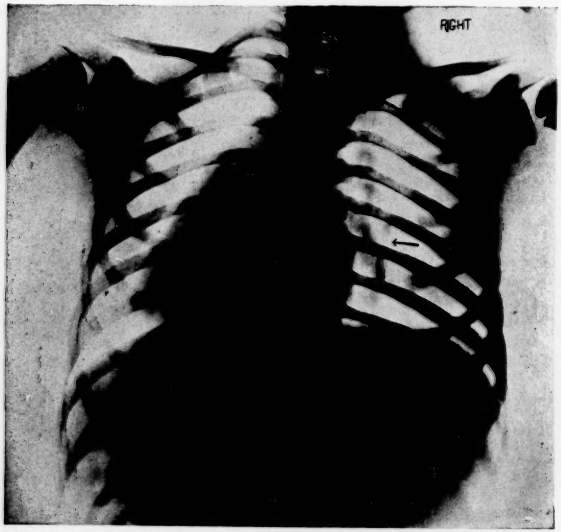


PLATE I. (A. W. George, M.D.)

CASE I. Case of enlarged bronchial glands, girl of twelve years. Notice dark shadows situated along right border of heart, extending up into apex. Seen in all normal chests, but to less extent than this. Lungs and pleura otherwise normal.

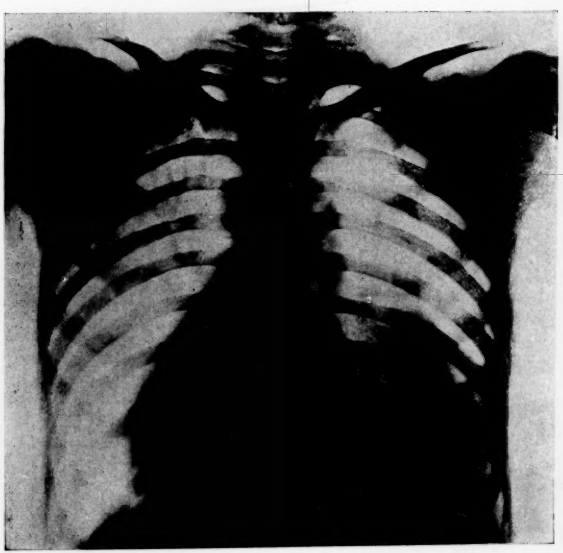


PLATE II. (A. W. George, M.D.

CASE II. Case of foreign body, nail, in lower lobe of right lung, boy of twelve years. Nail inhaled five years ago and not suspected then, as case was examined by Roentgen method, and foreign body not recognized. Treated since for various diseases of lungs and pleura. Roentgenograph shows nail surrounded by a dark shadow, indicating thickened pleura and collapsed lung. Operation not successful.

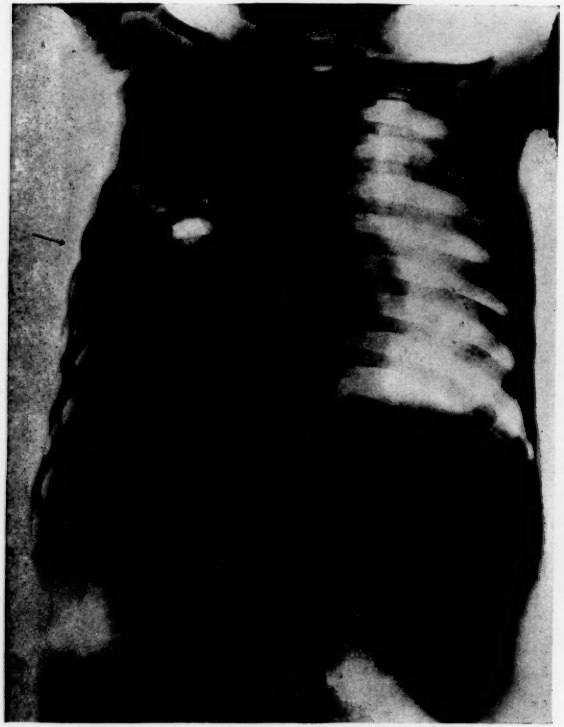


PLATE III. (A. W. George, M.D.)

CASE III. Case of plastic pleurisy in girl six years of age. Shadow extending over entire left chest excepting in central part. Shadow not changed with position.

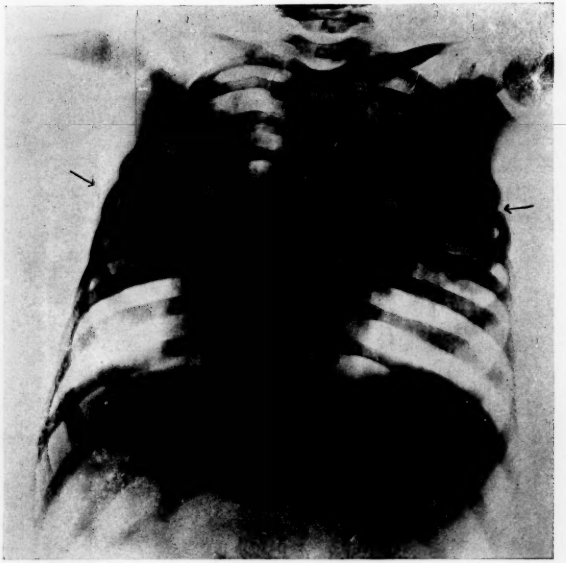


PLATE IV. (A. W. George, M.D.)

CASE IV. Case of acute miliary tuberculosis in girl of twelve years.



PLATE V. (A. W. George, M.D.)

CASE V. Case of pneumothorax in boy of nine years, taken a year after an attack of hydropneumothorax, showing the cardiac shadow displaced to right, and held there probably by adhesions; shadow of thickened pleura in lower left pleura. An area of either empyematous lung or cavity formation seen in central part of left lung.

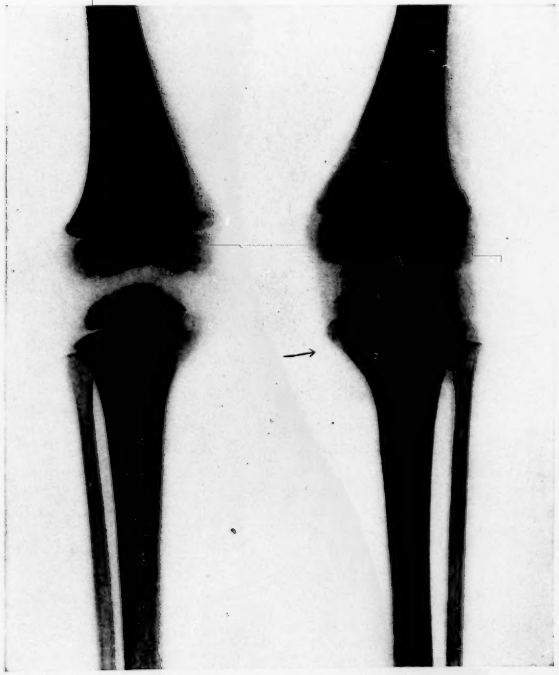


PLATE VI. (A. W. George, M.D.)

CASE VI. Case of osteomyelitis, boy of eight years. Process started in epiphyseal line of tibia. Operation delayed and process extended into epiphysis with destruction of bone and sequestrum formation. Capsule of joint thickened as seen by shadow.



PLATE VII. (A. W. George, M.D.)

CASE VI. After operation with bone plug in place. Plate demonstrates why operation was a failure. Sequestrum remaining behind plug.



PLATE VIII. (A. W. George, M.D.)

CASE VII. Case of villous arthritis in girl of thirteen years; capsule thickened and joint full of hypertrophic villi.

strates why operation was a failure. Sequestrum remaining behind plug.

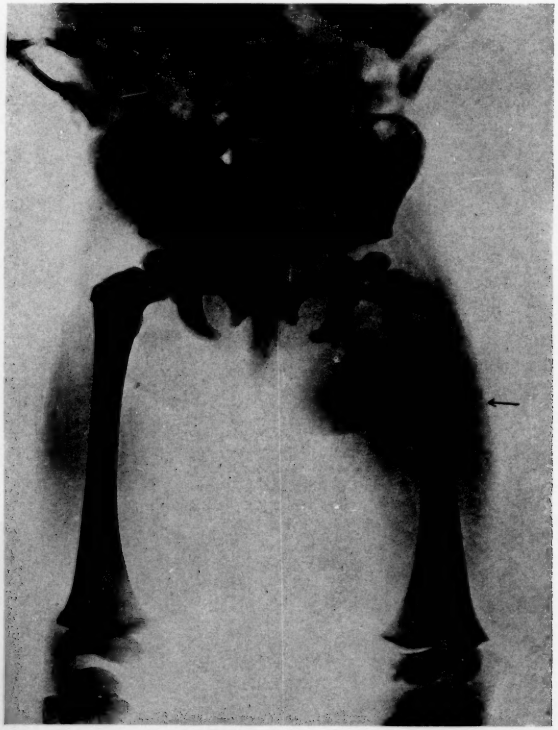


PLATE IX. (A. W. George, M.D.)

CASE IX. Case of acute infectious osteomyelitis in child of two and a half years, twelve hours after onset. Roentgenograph shows a haziness of the outline of the left femur with thickening about thigh. Process went on to general destruction of bone of the entire shaft of the femur. This (Plate IX) illustrates how early changes in tissues and bone can be demonstrated by the Roentgen ray; as early, in fact, as there are changes in tissue or bone.

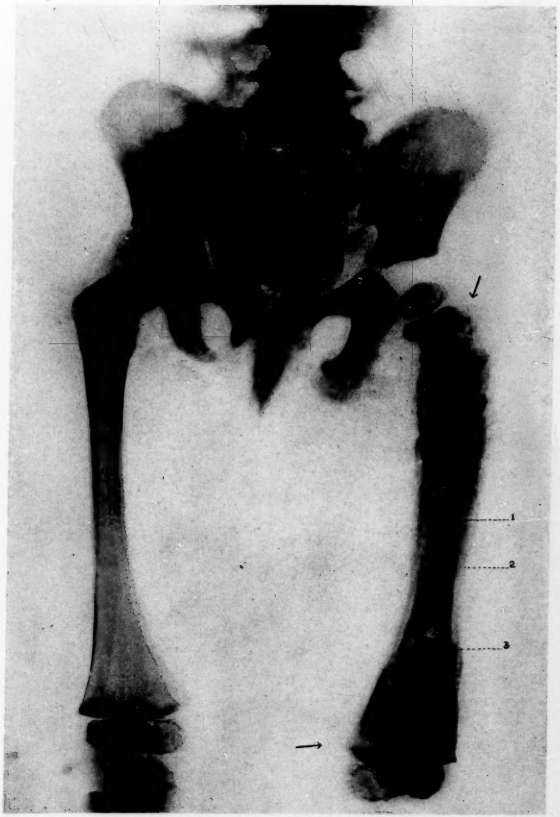


PLATE X. (A. W. George, M.D.)

CASE IX. Case IX five weeks later. 1. — Areas of suppuration. 2. — Newly-formed periosteal bone. 3. — Necrotic cortical bone. Arrows indicate point of attachment of capsule and periosteum to shaft of femur. Notice that joints have not as yet become diseased, and that infection of the bone is confined within the limits of the periosteum.

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in children allows great opportunities for a varying treatment, if we can only follow the living, ever changing processes of the disease every few days. Used in this way for diagnosis, the Roentgen ray shows us the primary lesions of the disease, and for treatment therefore, the knowledge obtained by this method is far more important than a knowledge of the terminal lesions found at the post-mortem, especially as these latter lesions are often misleading as merely representing terminal destructive processes corresponding to the later stages of a number of different diseases.

REMARKS OF DR. ARIAL W. GEORGE, OF BOSTON.

There are certain points which should be noted in regard to the Roentgenology of children. In the first place the technic offers many more difficulties than that which is required in adults. What Dr. Rotch has referred to is especially important, that is, having the first plate taken successfully. Even though a child has submitted quietly when the first plate has been taken, it has become so restless from being restrained that it has been almost impossible to get a second plate, even if it comes on another day.

There are certain conditions which can only be diagnosticated by the Roentgen method. For instance, in normal conditions the epiphyses and centers of ossification are an unknown quantity until an examination has been made by the Roentgen method. In like manner small effusions in the pericardium, and very often the existence of thickened pleura, can be diagnosticated. In other conditions, although the Roentgen method is not the only one which will throw light on the disease, certainly a correct diagnosis cannot be made without it. The truth of this assertion is shown in the differential diagnosis of obscure cases of tuberculosis, osteomyelitis and syphilis.

What I have just said has not included those cases of foreign bodies, which can only be absolutely located by means of the Roentgen method. Also those cases of anomalous conditions of the organs and of the bones. Instance, the absence or imperfect development of the tarsal bones, the absence of ribs, or parts of ribs, and the numerical variations which at times arise in the spinal column.

A subject of especial interest has come to my notice through a fairly large experience in the Out-Patient Department of the Children's Hospital, — the injuries to the elbow joint in children. Very little is known at present about these injuries, and what knowledge we have of them is exceedingly imperfect. Yet the results of this lack of knowledge and the unfortunate results of improper treatment are manifest where such a series of injured elbow joints are followed up from beginning to end. The reputation of the surgeon who has charge of these cases will in a vast majority of instances be injured unless he avails himself of such conditions in the elbow as can be seen in the Roentgenograms.

The epiphyses are the most important centers of the skeleton, for on them depend its future development, epecially in infancy and childhood, and when these centers are impaired there results far-reaching influences in later life. A thorough knowledge of the different changes which take place in even this small area is very important, for these centers are where disease may begin, from which disease may disseminate, where it may lead to disastrous consequences and may leave its permanent marks.

Very little is known of the etiology of the diseases of nutrition and the especially important rachitic conditions which play such a great rôle in early life, and we also have a comparatively slight knowledge of its early stages. A more exact knowledge, obtained by the Roentgen ray, of the normal development of these parts, may lead to the recognition of more definite etiological facts regarding the disease and all other diseases connected with nutrition.

I have never yet found that the radiographs, however misleading they may be through imperfect interpretation, failed to represent a picture of what really exists. The Roentgen method will not demonstrate everything which exists in the body, but it certainly will not show that which does not exist.

In closing my remarks I should like to call your attention to how little regard is paid to the teaching of the Roentgen method of diagnosis in the medical schools. I am sure that great benefit would result from giving such teaching, for it would enable the student to understand the physical conditions existing in disease far better than he does now from simple physical examination of disease.

TWENTY-FIVE YEARS' EXPERIENCE IN THE TREATMENT OF STRICTURE OF THE URETHRA.*

BY FRANCIS S. WATSON, M.D., BOSTON.

WHAT I have to say upon this subject to-day is of a frankly personal nature, and relates in large measure to my own experience in the treatment of this malady and some of the lessons that I have learned in the course of the last twenty-five years, during which such cases have come under my care. For the sake of clearness and to enable you to follow my remarks more readily, I will state the points upon which I shall touch and the sequence in which they will be referred to, which is as follows:

1. The cases summarized in the form of a table which shows their total number, the nature of the process in which the strictures originated, the different methods of treatment to which they were submitted, and the mortality attending each of them respectively and of the total number as a whole.

2. An analysis of these cases with reference to the causes of death.

3. The character of the results of each of the different kinds of treatment.

* Read before the Massachusetts Medical Society, June 11, 1907.

4. The rules which must be observed in the performance of internal urethrotomy and the after-care of the operation.

5. The best manner of dealing with impermeable or very dense and extensive strictures of the perineal portion of the canal.

TABLE I.

	Cases.
Of gonorrheal origin,	542
Traumatic,	35
Due to the action of caustic,	1
Congenital,	2
	580

METHODS OF TREATMENT.

	Cases.	Deaths.	Mortality.
Gradual dilatation,	172	1	0.58%
Divulsion,	9	0	—
Internal urethrotomy alone,	220	2	0.91%
Internal and external urethrotomy,	102	5	4.9%
External perineal urethrotomy alone,	56	5	8.9%
Combined suprapubic cystotomy and external perineal urethrotomy,	4	0	—
Partial resection,	4	0	—
Electrolysis,	13	0	—
Total,	580	13	2.2%

OPERATIVE MORTALITY.

Gradual dilatation is universally acknowledged to be the safest of all methods of treatment.

The mortality attending the operations of divulsion and internal urethrotomy is very small and is practically the same for both of the methods.

The high mortality which attends the performance of external perineal urethrotomy is to be referred to the critical conditions under which the operation is in many cases performed, and not to the procedure *per se*.

Electrolysis has about the same risk attaching to it as that which attends gradual dilatation.

The mortality of divulsion and of internal urethrotomy I have determined from a series of 1,000 cases of the former and nearly 5,000 of the latter, which I have collected from the literature.

The operative mortality of the series of cases in which divulsion was done was 2.1%. That shown in cases in which internal urethrotomy was done was 1.9%.

In my own series of 220 operations of internal urethrotomy in which that operation was performed alone, there were but two deaths, or less than 1% mortality, and I have never had a death follow the operation in private practice.

The mortality of external perineal urethrotomy I have computed from a series of 2,200 cases which I have collected from the literature and found it to be exactly 9%. My own mortality record is almost identical with that of this large number of cases, it being 8.9% in 56 cases in which I have done the operation alone.

CAUSES OF DEATH.

Deaths occurring in connection with any of the methods of treatment of stricture are, practically speaking, referable to one of two conditions.

1. Shock propagated from the peripheral nerves of the urethra and originating in the use of urethral instruments. One of the interesting features in this connection is the curious fact, which is true of both the constitutional disturbances and of the deaths which follow the use of urethral instruments, as in gradual dilatation for example, and which is, that neither the one nor the other of these untoward results is more likely to occur from shock, when violence and injury have occurred with the use of the instruments, than when they have been used with skill and gentleness.

In the cases in which deaths of this kind take place, the renal function is almost always suppressed. In most instances it is probable that the kidneys are already more or less diseased, but it is still an open question whether or no nervous impulses transmitted from the urethra or bladder in this way are capable of suppressing the function of a normal kidney.

The deaths of the kind of which I have just been speaking occur usually within a few hours following the use of urethral instruments.

2. Sepsis in one form or another accounts for almost all the other deaths which occur. In the cases in which so-called urinary infiltration is present, it is the already existing general septicemia which is responsible for the fatal result, and not the operation.

Much the larger number of deaths occur in this class of cases.

Death from sepsis is undoubtedly more likely to follow internal urethrotomy than other forms of treatment, if cleanliness and aseptic precautions are not observed in the performance of the operation. If they are, this ceases to be true and no further proof of the fact is needed than the very small mortality which appears in connection with the large number of operations which I have mentioned above.

As a matter of fact and everyday experience, a large contingent of the deaths is furnished by the employment of gradual dilatation by those who are unskilled in its use. This is because of the making of false passages by the rough use of the instruments and the opportunity thus afforded for the originating of septic processes which have their starting point in the false passages and the septic products which they harbor.

Gradual dilatation is therefore quite as dangerous a method of treatment as any other when it is not carried out by well trained hands. But few practitioners hesitate to use this method while they would not undertake the more definitely operative measures.

CHARACTER OF THE RESULTS OBTAINED BY THE DIFFERENT METHODS.

At the time at which I was a medical student one often heard the dictum, "Once a stricture, always a stricture"; in other words, it was regarded as an incurable malady. How little true this is to-day we shall see in a moment.

CURE.

By cure I mean that patients do not require to pass sounds subsequent to the operation or to the completion of the treatment, in order to maintain the normal caliber of the urethra.

My knowledge of the later results obtained by *gradual dilatation* by *internal* and by *external urethrotomy* is derived from my own experience, and that is the most accurate basis upon which to rest an opinion. Of *divulsion*, my own experience is not sufficient to enable me to speak authoritatively. I have therefore taken for the purpose of determining the final results of this method, the most favorable exhibition of them with which I am familiar, namely, the table of 27 cases out of a series of 404 operations performed at the Massachusetts General Hospital and published a number of years ago by Scudder. Before referring to these two methods, I will dispose in a few words of the results obtained by *gradual dilatation*, and *external urethrotomy* and electrolysis.

I have succeeded in curing but 10 out of 172 patients treated by gradual dilatation, that is to say just a little less than 6%, and in all 10 of these cases the strictures were in an early stage of formation.

Most of the 56 patients upon whom I have performed external urethrotomy alone were hospital patients and the larger number of them were lost sight of. Of the few that I have seen and examined since, but a small proportion have been cured, 10% perhaps.

When electrolysis was being vaunted as a method of treatment, a number of the members of the American Association of Genito-Urinary Surgeons gave it a fair and thorough trial. Personally I applied it in 13 cases. The unanimous verdict of all of us was that it was useless in all cases and harmful in some.

INTERNAL URETHROTOMY.

Of the whole number of 322 patients upon whom I performed the operation of internal urethrotomy alone, or in combination with external urethrotomy, there were 96 who furnished the opportunity to make subsequent examinations of the conditions of the urethra. In 22 of these cases less than two years had elapsed, when these examinations were made, since the operations were done, and I have not included them in the table. In 20 *others* the operation *failed*, in that the symptoms were not wholly relieved, or else that recontraction had taken place. In the remaining 54 cases, or 56% of the whole number, *cure* had resulted from the operations. The subjoined table gives in detail the calibers of the strictures at the time of the operation, the times at which the examinations were made subsequent to the operations, the sizes to which the strictures were cut by the operation and the calibers of the urethras throughout when examined later.

It is to be understood that sounds were not used in any of these cases subsequent to the opera-

Cases.	Caliber of strictures when operated upon.	Times at which later examinations were made.	Sizes to which strictures were cut.	Calibers when examined later.
2	22 and 24	22 years	32 and 34	30–30
2	26 and 14	20 „	32 in both	30–29
3	25–27 and 22	16 „	30–32–32	30–28–28
2	20 and 18	15 „	30 and 32	30–29
1	18	13 „	34	30
3	12–10 and 26	12 „	32 in all	32–30–28
2	22 and 18	10 „	30 and 32	28–30
2	18 and 24	9 „	32 in both	32–30
5	14–18–20–10–22	7 „	32 in all	32 in 1; 30 in 2; 29 in 2
5	8–26–24–14–18	6 „	32 in all	30 in 3; 28 in 2
8	Fili–22–14–22–18–22–16–10	5 „	34 in 2; 32 in 4; 30 in 2	32 in 3; 30 in 2; 29 in 1; 28 in 2
8	22–20–26–24–20–10 Fili–26	4 „	32 in all	30 in 6; 32 in 1; 28 in 1
11	28–14–22–10–16–Fili–22–14–24–22–26	3 „	30 in 2; 32 in 9	30 in 4; 32 in 3; 28 in 4
54				

No contraction whatever in 13
Recontraction of 4 mm. in caliber in 12
„ „ 3 „ „ „ „ 5

Recontraction of 2 mm. in caliber in 20
„ „ 1 „ „ „ „ 4
—54

Cases.	Times elapsed since operation.	Use of sounds.	Recontraction or not.
2	12 years	Yes	28 in both
1	11 „	No	16
1	9 „	Yes	21
1	8 „	Once in 6 months	22
1	7 „	Yes	29
1	6 „	„	30
2	5 „	In 1 case, 4 months; In the other, no	30 26
6	4 „	In 1 case, no; in the other 5, yes	13–25–21–25–18–31
3	3 „	In 1 case, no; in 2 others, yes	Very small in 1; in other 2, 30–21
3	2 „	In 1 case, 2 months; in 2 others, yes	26 in 1; in other 2, 26–11
6	1 „	In 4, yes; in other 2, 6 months and 9 months	28–30–25–25 in 4; in other 2, 26–29
27			

tions except at intervals of a year or more for the purpose of examination.

The following are the data given in Scudder's table:

It will be seen from this table that there were but four patients who did not use sounds at all after the operations. Recontraction took place in all of the cases as follows:

To 26, 16, 13 and to a " very small size." That is to say, none of them can be called cured.

In 5 more of the cases the patients used sounds but a short time only, or at long intervals after the operations. In 3 of these cases no recontraction of any consequence took place, and they may properly be claimed as cures. In the other 2 cases recontraction to 26 and to 22 occurred.

The rest of the patients, 18 in number, all used sounds after the operations. Even so there were but 8 of them who succeeded in maintaining the urethral calibers at sizes varying from 26 to 30. Recontraction in various degrees (between 11 and 25) occurred in the other 10 cases despite the use of the sounds.

In other words, 11% of cures by divulsion as compared with 56% in internal urethrotomy.

With the exception of a very few English surgeons and a small number of the profession in this community who still practice, I believe, the operation of divulsion, it has been for many years universally relegated to the number of obsolete surgical procedures to which it properly belongs.

Why should the results of internal urethrotomy be better than those obtained by other forms of treatment, and why should not the cicatrix of an internal urethrotomy incision follow the law of other cicatrices and contract?

These questions have been renewed from time to time ever since Reybard, in 1853, presented in his treatise upon urethral stricture the results of his study of the cicatrization of *longitudinal* incisions in the urethra.

He showed conclusively that such wounds, if prevented from reuniting during the process of healing, result in smooth, thin, delicate and non-contractile cicatrices which add to the caliber of the urethra at the points occupied by them, instead of narrowing it.

The truth of this statement was confirmed for the first time by post-mortem examination, in the human subject by Perrin in 1865, in the case of a patient dying three years after an operation of internal urethrotomy performed upon a stricture of the bulbous portion of the canal.

Since then, other post-mortem proofs have accumulated, and a very large number of observations in the living subject by means of the endoscope and other instruments have established beyond dispute the correctness of Reybard's assertion.

Not long ago I had the opportunity of examining two patients upon whom I had performed internal urethrotomy twenty-two years previously. Both had had well-marked organic strictures. Neither of them had used sounds subsequent to the operations. The endoscope enabled me in one case to detect a very fine white line upon the roof of the urethra at the site of my former incision. In the other urethra I could find no evidence of any cut having been made. There was no sign of stricture in either case. Acorn tipped sounds failed to detect the slightest unevenness or constriction in either of them. In both cases a number 30 sound slipped perfectly easily into the bladder through the urethra.

It is evident why internal urethrotomy is the method of choice from a surgical point of view. Let me add, however, that this is true only with certain reservations, and only when the operation is done according to certain rules which will be specified in a moment.

Gradual dilatation remains, as has been said, the safest of the procedures. There are three reasons for it not being the form of treatment which is always applicable These are:

1. It is rarely curative. 2. It cannot be applied or it cannot be made effective in cases of impassable stricture, in such as are so resistent as not to yield to the pressure of the instruments introduced, and in such as recontract rapidly after the employment of the instruments used to dilate them — resilient strictures. 3. It is unwise to employ the treatment of dilatation when constitutional disturbances, chills, fever, etc., follow its use.

The cases which fall under one or another of these headings are numerous and all of them should be treated by internal urethrotomy. Upon one point I wish to lay special stress. It was insisted upon most wisely by Sir Henry Thompson, and is this: In the cases in which gradual dilatation is attended by constitutional disturbances, it is far safer to perform an internal or an external perineal urethrotomy than to continue the treatment by gradual dilatation.

I accentuate this because I know it to be true from experience, and because those who may be ignorant of the fact might well hesitate to adopt the seemingly more radical procedure of internal urethrotomy in the face of the occurrence of constitutional disturbance which had arisen in the course of gradual dilatation.

On the other hand, the following restrictions should be imposed upon the operation of internal urethrotomy.

1. It should not be applied to strictures further from the meatus than five inches. This is because of the greater danger of hemorrhage and of sepsis which occur when the incisions are made at a deeper point than this.

If external perineal urethrotomy is *combined* with internal urethrotomy, the latter operation can be performed as safely upon the strictures of the deep urethra as upon those of the anterior.

2. The operation is not as effective as external urethrotomy or resection in cases of very dense and extensive strictures of the perineal part of the canal and deeper.

RULES TO BE OBSERVED IN THE PERFORMANCE OF INTERNAL URETHROTOMY.

To be safe, and if it is to be successful in obtaining cure, the following rules must be strictly

observed in the performance of internal urethrotomy:

1. The urethra must be thoroughly irrigated immediately after the operation, after the first urination and after the first passage of sounds subsequent to the operation. The bladder should also be emptied and irrigated at the end of the operation.

2. The meatus must be cut to a size of 4 mm. larger than the normal caliber of the urethra.

3. The strictured part of the canal must be cut to the full size of the normal caliber of the urethra in each individual case.

4. The normal caliber should in each case be determined beforehand in accordance with the standard of measurements laid down by Otis.

5. The operation will fail if the urethra is acutely or subacutely inflamed at the time of its performance, or if such inflammation arises during the healing of the incision subsequently. The tying of a catheter into the urethra after the operation is objectionable because of the inflammatory reaction which it so frequently excites. When this occurs a greater amount of connective tissue is formed in the cicatrix and recontraction results.

6. The normal caliber of the urethra must be maintained during the healing of the incision, and this is secured by the passage of a sound of the size of the normal caliber of the urethra every second day after the operation until the wound is healed.

This requires on an average fourteen days. The absence of bleeding following the use of the sound is a reliable guide for determining when the incision has healed.

Otis's standards of urethral measurements.

The more important points connected with the standard of measurements laid down by Otis are these:

1. A constant relation exists between the circumference of the flaccid penis and the caliber of the urethra.

2. The penile circumference and urethral caliber vary in different individuals; consequently there is no such thing as one normal size for all urethras.

3. The average caliber of the normal urethra corresponds to No. 32 sound measured by the French scale. The penile circumference which corresponds to this is 3¼ inches. For every quarter of an inch of increase or decrease in the penile circumference there is a corresponding variation of 2 mm. in the caliber of the urethra.

This standard of measurements I, many years ago, confirmed by testing it in nearly 100 cases. I have not found a single instance in which it was not correct. Otis's standard is the only reliable, logical and accurate one that has ever been produced.

It is scarcely necessary to add that the size of the meatus is no guide to that of the urethra. The average size of the meatus is 24. A great many meatuses fall below this size, but few exceed 26. The meatus should be cut as the first step in the operation.

There remains a word to be said with regard to the best manner of dealing with the difficulties encountered in cases of impermeable stricture, and of treating those of unusual density and extent which are in the perineal part of the urethra.

With regard to the first I would say that there are but two ways which I think desirable to employ in order to trace or to make a road through an impassable stricture in the perineum.

The first of these is to perform a suprapubic cystotomy, pass a sound from within the bladder through the posterior urethra until it is arrested by the posterior face of the stricture. Next, pass another instrument from the meatus through the anterior urethra until it is arrested by the stricture. Now divide in the median line the strictures that intervene between the points of the two instruments and the road will have been safely opened.

The second way of accomplishing this result is by exposing the membranous urethra and the anterior end of the prostatic portion of it by the classic transperineal incision which extends in a forward arch in front of the anterior margin of the anus from one ischial tuberosity to the other, and by blunt dissection after dividing the median tendinous point of union of the structures of the perineum. The anterior bit of the prostatic urethra is then incised longitudinally, and as a rule a fine filiform bougie will readily pass from behind forward through the constricted part of the canal. Upon this instrument as a guide, the mass of connective tissues constituting the stricture is then divided.

Partial resection of the urethra. — The best method of treatment for the intractable strictures of the perineal portion of the canal which resist all the more usual means is by excision of the mass of connective tissue constituting the stricture. The results obtained by this method in such cases are better than can be secured in any other way.

Summarizing what has been said it may be put thus:

1. Electrolysis and divulsion are methods of treatment which should both be abandoned.

2. Internal urethrotomy is the only method of treatment by which an important number of cures can be obtained. It is an operation involving but little danger. Its application should be restricted to strictures within the first five inches of the canal unless external perineal urethrotomy is done in combination with it.

3. For strictures of the deeper part of the canal gradual dilatation is the best form of treatment if constitutional disturbance does not rise in connection with its employment, and if the urethra for a reasonable length of time maintains the caliber to which it has been expanded by the instruments.

4. For the cases in which the strictures of the deep urethra recontract rapidly after dilatation, or those in which constitutional disturbances arise in the course of its employment, also for the resistant or impassable strictures of the deep urethra, in all of which conditions gradual dilatation

is useless, external perineal urethrotomy, or internal urethrotomy combined with the external incision in the perineum is the safest and most efficient method of treatment.

5. External perineal urethrotomy is the only operation that should be applied in cases of stricture accompanied by urinary extravasation.

6. Resection of the strictured part of the canal should be selected in cases of intractable, very dense strictures of the perineal part of the canal.

Internal urethrotomy done under the conditions and in accordance with the rules I have stated above will yield from 50% to 60% of radical cures, and at an operative risk of death of about 1.5%.

DISCUSSION.

DR. J. C. MUNRO, of Boston: What Dr. Watson has said upon divulsion should be printed in large letters. I have never done the operation myself, and have always condemned it as most unsurgical. External urethrotomy has always been an operation of great interest to me, and some years ago I took occasion to look up my end results, and found that the deep urethra instead of contracting had become larger in caliber than normal.

I heartily agree with Dr. Watson in his views on the permanency of the results following gradual dilatation. This method has a very limited field of usefulness and should not be placed in the same class with urethrotomy. I personally feel very grateful to Dr. Watson for what he has taught me this afternoon, and wish to express to him my thanks.

DR. F. B. LUND, of Boston: I have been greatly interested in Dr. Watson's excellent presentation of this subject. We have at the City Hospital many cases of stricture of the urethra to treat, and we treat them all by urethrotomy; internal for the anterior strictures and external for the deep strictures. Internal urethrotomy as compared with divulsion is a scientific and accurate procedure instead of a violent and inaccurate one.

In a large number of external urethrotomies without a guide, which we are often compelled to perform in difficult deep strictures at the hospital, we are practically always successful, and I have only seen one case in the hands of a colleague in which the procedure of suprapubic cystotomy and retrograde catheterization had to be resorted to.

Many of our hospital cases belong to the class who neglect themselves after operation and consequently have to be operated upon a second or even a third time for reconstruction. It is in these recurrent cases, where the urethra is twisted and deformed by scar tissue, that the surgeon has the greatest difficulty, a difficulty, however, which patience will usually surmount.

I think that Dr. Watson's long experience in this class of cases enables him to speak with authority, and that his conclusions will be of great value to those privileged to hear or read his paper.

PROSTATECTOMY IN TWO STAGES BY SPECIAL TECHNIC.

BY FOLLEN CABOT, M.D., NEW YORK,
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THE question of when and by what method to operate on middle age and old men suffering from prostatic obstruction is a difficult one to answer. No other problem in surgery requires more good judgment and skill.

There is no one method of operating to which all cases must fit. The patient's condition must be carefully considered and treatment instituted to meet the individual needs. A man may have a well developed senile hypertrophy of the prostate and yet be free from evidence of urinary obstruction. It is the position of the hypertrophy rather than its size which makes the trouble. While the rectal touch and the cystoscope are both of value in determining the amount and position of intravesical prostatic overgrowth, we must not depend upon these measures to the exclusion of others. The urinary distance, bladder tone and amount of residual urine should be carefully estimated. The presence of pain, of cystitis and other complications, — all should have consideration in determining the surgeon's decision. The general condition of the patient must be completely examined into and his arterial system, digestive organs and kidneys considered as to their probable resistance to surgical shock. Unfortunately, many prostatics do not reach the specialist until they are partial wrecks from long suffering and have become the victims of misguided kindness on the part of their physicians. In considering the question of treatment for a prostatic, his age, by itself, should not be considered of much importance. A man of seventy-five may be a much better risk as to resistive power than one of sixty-five.

In this paper I have under consideration sixty personal cases operated on in the past four years. I have divided them into three groups. Before referring to them in different groups, I will say that I do not believe it good treatment to allow a prostatic to become entirely dependent on the catheter. I find with few exceptions that this rule holds good. The catheter, however, may in certain cases be used to tide over occasional temporary attacks of retention, if the bladder tone is fairly well regained in a few days.

In another class of patients the catheter may be used once a day to empty the bladder and at the same time irrigate it with boric acid or a mild solution of silver nitrate. If, however, we find the residual urine is gradually increasing, or there is pain, spasm of bladder, hemorrhage or chills following use of the catheter, I advise early operation.

In my list of 60 prostatectomies, 33 were operated by perineal route with 1 death, and 27 by suprapubic, with 3 deaths. In spite of the lower mortality in the perineal cases, I have become convinced that in the majority of prostatics the suprapubic route is the one of choice. In my 33

cases the prostatic hypertrophy was fairly small and the patients were much better risks than the 27 done by the suprapubic route. I believe the urinary function and sexual power to be better preserved when the prostate is removed above the pubis.

I. Therefore, I now teach that no more than 20% of prostatic cases, and those with a small growth easily reached by rectal touch and without apparent complications, are suited to the perineal operation.

II. While the remaining 80% of the cases are best adapted to the supra-enucleation, many of these, owing to complications and debility, will not survive a complete prostatectomy by any route.

III. What shall we do with this debilitated and emergency class of probably 40% of all prostatics, — the cases which make us doubtful as to their standing more than mild surgical shock and yet where something of a surgical nature is necessary?

Lilienthal, of New York, answered this question in 1896, by performing preliminary cystotomy by suprapubic route; draining till the patient was up and about, then through the same cut enucleating the prostate. To my mind this method is one of great value, and from my own experience with it, I believe it will be used more and more as its merits are better understood.

In performing this two-stage operation by special technic of my own, I always use the suprapubic route.

My reasons for this are that the field of operation can be more closely watched during and after operation than can the perineal one. This is a matter of importance when loss of blood has to be carefully prevented and slough watched for later on. The size of the prostate and general condition of the bladder can better be determined; for instance, stone discovered loose or in a pocket; also new growth found which might have otherwise been overlooked, even when the cystoscope has been used; and, finally, enucleation more quickly performed than by perineal route, and the drainage tube much more comfortably placed for the patient when he is up and moving about between the two operations.

The following case, in which I performed enucleation in two stages, typifies what I have already said. I have no doubt that this patient would have succumbed to any prostatectomy if it had been performed in one stage. As it was, he weathered two little blows given with an interval between them for recuperation, instead of going under to one big blow delivered when he was weak and unprepared to resist it.

This patient, the relative of a prominent New York physician, was operated on in December, 1906. He was seventy-five years old and had been suffering from symptoms of prostatic obstruction for twenty-five years. General condition was bad; irregular heart; well-marked arteriosclerosis. Digestive system in fairly good condition. Some albumin and few casts in urine showing evidence of renal irritation as result of back pressure. Very severe cystitis, alkaline urine with well-marked ammoniacal decomposition. Urinating 6 or 7 times at night and each hour or less in day till catheter life was begun shortly before I saw him. Residual urine, 14 oz. Urinary distance somewhat increased and prostate, by rectal touch, high up and difficult to reach. It was apparently not very large and felt smooth and firm. Recently he has complained of chills and has reacted badly to bladder irrigation. Never has passed much blood. Owing to the patient's enfeebled condition and severe cystitis it seemed best to operate by two stages, and so I performed a suprapubic cystotomy under light chloroform anesthesia, it being thought best not to give gas. The bladder was opened under air dilatation and a tube of 44 French caliber introduced. The prostate and bladder were also carefully palpated, all of which took eight minutes. The third lobe or isthmus was hypertrophied and caused the difficulty. The rubber drainage tube was secured in place with a Bangs shield and the patient was put to bed. The old gentleman quickly recovered from the anesthesia. Strych. sulph. gr. 1–30 each three hours was administered, also small quantities of soft, uncharged water were soon taken at frequent intervals. The latter was given to stimulate the kidneys. While the pulse never went over 100 and the temperature remained at about 99.5°, there was considerable prostration the following day. However, in forty-eight hours the patient rallied well, and on the third day sat in a chair for an hour or two. Bladder was washed frequently with boric acid and saline solution. Cystitis gradually improved with addition of urinary antiseptics and acids to correct alkaline reaction. In about two weeks the patient was walking about and going downstairs to his meals. At the end of three weeks the urine was clear and free from albumin. He then was in much better condition than he had been for several years. I then, without telling him that the operation had not been finished, operated again through same cut under chloroform, and in nine minutes removed the prostate. During the enucleation a catheter was introduced through the penis, hot saline solution was continually run into bladder and at the end of the operation several ounces of solution of adrenalin 1–3000 was introduced. Very small amount of hemorrhage. The congestion about the prostate had disappeared during the period of rest and so there was less blood in and about the gland. The enucleation was carried out so that the whole prostate was removed in one piece. The prostatic capsule was packed with a strip of gauze which had been soaked in adrenalin 1–3000. The urethral catheter was left in place behind the packing to use for adrenalin in case of hemorrhage and later, after gauze was removed at end of forty-eight hours, for inlet to irrigation. The large tube in the suprapubic wound was for outlet to fluids. The patient seemed to have less prostration following this final operation than he did from the preliminary one. I attribute this fact to his improved condition as a result of good drainage of bladder, rest and nursing for three weeks. In three days he was up and at the end of seven days both tubes were removed. During the healing of wound a small catheter was daily passed into the bladder through wound and the cavity irrigated. In fourteen days the wound had completely closed and the patient was soon passing urine in a very satisfactory manner. The control was good from the first, as it usually is when the operation is performed suprapubically. After this time no further irrigation was employed and no urethral sounds passed at any time. It does not as a rule seem to be necessary unless there is some complicating condition in the urethra which needs it. Stricture, however, in my experience, is rare in prostatics. This

month, June, patient reports himself in fine condition, is back at work, has no urinary symptoms, empties his bladder completely and feels better than he has for twenty-five years.

While all cases do not do as well as this one, the advantages of the two-stage operation are clearly shown. In some of my more recent cases I have performed a preliminary cystotomy under local anesthesia and then at the same sitting, if the patient's condition warranted it, given a little chloroform and removed the prostate. This enucleation should not consume more than ten and frequently only five to six minutes. In one case I did the whole operation under local anesthesia and the patient complained of little pain. In subjects with very fat abdominal walls, local anesthesia is difficult or sometimes not practicable at all. I believe though that, in future, I shall open the bladder under local anesthesia in all the cases in which I find it practicable. Fortunately few prostatics are very fat, so that it can be done in most instances. Then, if I do not believe it wise to do more, drain till the patient's condition warrants further interference. This is a new way of using the two-stage operation and is readily adapted for a different class of individuals than given in the history of the one above. I am also convinced that ether anesthesia is the cause of many deaths in prostatics from kidney and lung complications following operation, and so never use it. Again, if we avoid general anesthesia of any kind for half the operation, we are saving the patient a great deal. The nervous element, of course, has to be considered, but I have seen no ill effects from the local anesthesia. I agree with Fuller that opium or any of its alkaloids should not be given, as they injure the patient's chance of recovery, by lowering his vitality and preventing proper renal action. I, therefore, never use them.

I present the following conclusions:

1. In the event of any question of the patient's physical condition being equal to a complete prostatectomy, do a preliminary suprapubic cystotomy under local anesthesia. This will probably be the operation of choice in 50% of the cases. Drain the bladder while the patient is up and about, till the condition is better than before cystotomy. This will take from ten days to four weeks.

2. In all cases with severe cystitis, damaged kidneys in cases suffering with severe hemorrhages, in all so-called emergency prostatectomies, and in diabetics, carry out this preliminary cystotomy and later, as the patient's condition warrants it, do an enucleation.

3. Its advantages are the quick relief afforded with slight shock from severe symptoms. We give a patient all the advantages of a prostatectomy, with none of the serious dangers. He gets good bladder drainage and consequent rest and comfort.

4. If the preliminary cystotomy kills, a prostatectomy would have been foolhardy. If the patient recovers from the little blow he usually rapidly gains strength; the prostate becomes less congested; the cystitis disappears and we have produced a change which usually permits a successful enucleation later.

5. At the time of this second operation, well developed granulation tissue has appeared and prevents absorption.

6. At each operation we have only one point of hemorrhage to look out for instead of two, as is the case in a complete operation at one time. This is of importance in feeble old men, and should not be overlooked. My special way of controlling prostatic bleeding is of distinct advantage and would better be used in all cases.

7. The final operation should never be performed till the patient's condition is better than it was before the preliminary cystotomy.

8. The ease with which these feeble old men become bedridden is a danger, and therefore the fact that they can be gotten up so quickly after the preliminary and final operations adds much to their chances of recovery.

Their proneness to contract pneumonia and other diseases while lying in bed is well known, and we diminish this danger by getting them on their feet in a few days. This is a much more difficult matter in the severe shock following a one-stage operation.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

(Concluded from No. 16, p. 531.)

CHATEAUBRAND thus relates that in his youth he was surrounded only by the women of his family, but he became amorous for a woman who only existed in his imagination. "*Je me composai donc une femme de toutes les femmes que j'avais vues: elle avait la taille, les cheveux et le sourire de l'étrangère qui m'avait pressé dans son sein; je lui donnai les yeux de telle jeune fille du village, la fraicheur de telle autre. Les portraits des grandes dames du temps de Francois I, de Henri IV et de Louis IV dont le salon était orné, m'avaient fourni d'autres traits, et j'avais dérobé des graces jusqu'aux tableaux des Vierges suspendus dans les églises. . . .*"

"*Un seul de ses regards m'eut fait voler au bout de la terre; quel désert ne m'eut suffi avec elle! A ses côtés, l'antre des lions se fut changé en palais, et des millions de siècles eussent été trop courts pour épuiser les feux dont je me sentais embrasé.*"

Later when he was exiled in England, he became extremely amorous of a young girl, because he found in her a resemblance to his former ideal, but, being married, he was fully aware of the inanity of his passion. If such is the passion in healthy minded men, what can it be in those who, on account of their family antecedents, or a nervous nature, are subjects of predilection for all mental diseases? They are in need of a particularly rigorous moral hygiene, and, on the contrary, I have endeavored to show that, during all their life, this feverish nature has been developed from their surroundings and the

character of their life. Consequently, one can hardly conceive of the intensity of these passions beyond which nothing else exists; they are a physical torture and, at the same time, a moral pain.

In studying the character of the criminal from passion we have seen the latent and deep causes of the crime, those which are the nearest to human nature and which, consequently, are the most difficult to reach. The occasional causes, on the contrary, those which furnish the circumstances to the subject which will cause him to commit his crime, are possible to modify, although this is a difficult undertaking. In the first place, the general causes which influence criminality are to be considered, and afterwards certain causes which pertain strictly to crimes from passion. We will merely mention the principal causes of criminality, making note of those which may exercise an influence over passionary crimes.

In the first place alcoholism has, as is well known, a very great influence on this class of crime. It often happens that it is during alcoholic intoxication that the jealousy of the man of the people breaks out, and the continued use of alcohol renders the character violent and irritable, and for this very reason predisposes the subject to acts of violence and vengeance.

I have also pointed out the influence of heredity and insanity upon crimes from passion. In the moral point of view one should note that the passionate subject does not lack moral sense in a general way, like the ordinary criminal, but that occasionally he is wanting in it as far as the special point of vengeance is concerned, and he considers the latter as an act of justice. As to imitation, the passionary criminal appears to be subject to the same rules as other criminals. One not only often meets with instances of repetition of the same kind, but occasionally one can distinctly see a copy in a passionary crime even including the details of another crime which has been committed shortly before by another person. For this reason one cannot underrate the dangers incurred by the detailed accounts of crimes in the newspapers and the bloody pictures that they place daily under the eyes of their readers who, unfortunately, are only too avid for these accounts.

A certain influence may be attributed to the climate and, generally speaking, it may be said that these crimes are more frequent in warm countries than in temperate ones; and lastly we would note that misery, ignorance, great political crises, are without any influence whatsoever on the criminal from passion.

Beside these causes of a general order, which have an influence on all criminality, one should rank the causes which are peculiar to crimes from passion. Leaving aside the culpability of their authors, these crimes are the consequence of the mistakes of people, of the law or of public opinion. A large part of the responsibility is incumbent upon public opinion, which encourages the seducer by its indulgence, if not even by its admiration. It is this same public opinion which directs the education of woman and gives her a tendency especially to the art of seduction and coquetry, thus rendering her far easier to seduce than seducing. And, lastly, it upholds the laws which insufficiently protect young women excepting to cause her to carry her fault in disgrace.

A part of the responsibility of a crime from passion is often incumbent upon the victim. Ordinarily what makes the murderer so interesting is the little interest that his victim inspires to honest people. There is evidently no proportion between the offense and the vengeance, but either he or she who has only been the victim is extremely badly placed to appreciate the greatness of the offense received. The seducer generally does not take into consideration the extent of his responsibility and always says that he has merely done like others, and he was protected by public opinion up to the day of the scandal. Morals have diligently taught him that to seduce a young girl and leave her afterwards is to dishonor her, to morally assassinate her, and that a man should marry the virgin that he has possessed, but customs and the law speak in a different tone.

It, however, is not enough for a man to ask, it is necessary that the young girl give herself up to him, and a question arises whether or not she is not quite as responsible, having given up all that her fall will bring upon her. Most assuredly there is certainly much truth in this objection; but, just as we admitted that a portion of the responsibility of the seducer is incumbent upon public opinion and the laws which protect and cover him, so one must recognize that woman, especially in the working classes, is prepared for the seduction by everything which surrounds her.

In the first place her education is bad. In all large cities young girls of the people are in a condition much superior to the men of their own class, in their dress, their external appearance and even mentally. They thus become the easy conquest of men of the easy class, and there would be fewer girls seduced and less adultery among married women if parents did not give their daughters habits of luxury superior to their fortune and their social rank. It is also to be remarked that at the present time the form of work has greatly facilitated seduction. Formerly workmen and their wives worked at the common home, the children also, and thus they all had a hearthstone around which they remained united. Now machinery, the large department stores and workshops have called them out of their homes, and there is a decrease in the morality which naturally follows this splitting up of families.

In the well-to-do classt he education of young girls is almost entirely directed towards everything that can render her seductive, and it would even appear that the instruction she receives merely adds to the possibility of her seduction. The jests, actions and words that she acquires are those which appear eminently suited to please, and all this tends to exasperate her coquettishness and simply goes to show that her education has for its ultimate attainment the conquest of a husband. Then marriage comes and the

woman has from this time on less use for her brilliant qualities and must, on the contrary, search the more severe ones of marriage.

Outside of education and coming back to the popular class, there is another cause which may force the woman onward to her fall, namely, the general insufficiency of the salary paid to girls.

To sum up, it must be admitted that the nature and education tend to draw women into a trap, into which they fall easily when the solicitations of a man are sufficiently pressing, and the need of money weakens her resistance still more. To resist all these temptations a woman must possess a very great moral force, and she must also be able to resign herself to her condition. Now, in point of fact, religious sentiment has very greatly diminished in the popular class, and in all classes, for that matter, within the last century. During the epochs of faith, in order to cause disorder, it was necessary to truly love; to violate the general laws one was obliged to make great sacrifices. It not only meant to face fortuitous dangers and to brave the laws, but one was obliged to vanquish in himself the empire of regular habits, the authority of the family, the tyranny of domestic customs, the opposition of the conscience and the terrors and the duties of the Christian.

We do not pretend to study the consequences of the disappearance of religious beliefs, but, from the standpoint of the question which we are considering, we should place aside two of its consequences, namely, the absence of resignation and the desire of an immediate personal benefit. It is quite certain that morals deprived of sanction cannot become popular, and that by losing the belief in a higher life the great mass of people have lost the sense of the moral itself.

The conduct of a young girl whose poverty prevents her marriage thus becomes a question of an interest well understood and is no longer a moral one. She will argue that it is just as well to have as much fun as possible during her young days, if nothing but age and infirmity are to follow. On the other hand the conception of marriage as the only possible union has also disappeared from the large majority of minds, and marriage has ceased to be a sacrament and has become a contract, which itself becomes every day more fragile under the influence of public opinion, law, and the jurisprudence in matters of divorce. The customs having rendered the fall of woman an easier and a more frequent matter, has law increased her protection?

In every instance where a misdemeanor is easy to commit the law should redouble its severity in order to do away with those who profit by this facility and, consequently, it should be severe for the seducer, especially severe for him who abuses the young girl by promising her marriage and abandoning her as soon as she becomes a mother.

Unfortunately, this, however, is not the case, and there is a certain Pharisaism to defend the search of paternity in the name of the family and morals.

This does not mean that the seduced girl's crime is legitimate, and if this crime was merely caused by some defect of the law, it would nevertheless be an immoral act and absolutely antisocial, because it is a crime and not an act of justice, and, on the other hand, the punishment inflicted upon the seducer is quite out of proportion to his crime. It is as much as wishing to proclaim the right of vengeance to the seduced girl, and this has most seriously compromised her cause and it has been discredited by a certain party of public opinion. It has been thought that the acquittals of juries practically proclaimed this right, when in reality they merely wished to give proof of an extreme indulgence that they had for the cause, because there are no punishments of a special nature for the passionary crime.

However, the mistakes of legislation have had an undoubted influence on criminality, and there is a sociologic law which may thus be defined; in every instance where, on account of an absence of legislation, the individual is not sufficiently protected, he will always have a tendency to mete out justice himself. Thus, for example, the law does not allow a suit to be brought for a gambling debt, and consequently society and customs have considered these debts as privileged, or ones of honor, and public opinion is far more rigorous for those who do not pay them than for the debtors against whom creditors are armed. It is, however, in cases of insult made to a person that the fact is most evident. It is quite certain that individual property is much better protected by the law than the human being. Thus the law renders hardly any satisfaction in the case of a person outraged in his honor and so forth; the consequence has been that the individual substitutes himself for the law and avenges his honor himself. What satisfaction could a man, who has received a slap in the face, obtain from justice? The defamation is also insufficiently punished, and here again the individual will mete out the justice himself. When he cannot or will not do it by resorting to duelling it is by a murder that he accomplishes his vengeance. The law does not protect sufficiently the honor of the young girl or of the husband, and here again feeling that they are not sufficiently protected they have been desirous of carrying out justice in their own way.

In France, at least, there seems to be a change for the better in the legislation, and in January, 1904, the civil court of the Seine accorded, as an indemnity to a seduced girl, a pension that her lover in reality owed her in his quality as father.

A young woman, abandoned with two children, claimed a yearly indemnity in order to bring up the children that she had had by him during several years of cohabitation. She proved that, during the entire time of their false marriage, he had conducted himself as a father towards her children, and, although he had not entered into any formal contract, he had given her to understand that she could rely upon him. The Court condemned the physician to pay his former mistress eight hundred francs income a year until the majority of the children, the decision handed down by the learned judge being as follows:

"Since it has been proven that up to within very recently the defendant has contributed in a certain measure to the support of the children; since it has been shown by the written correspondence produced in the trial coming from the defendant and constituting the commencement of a written proof, that from an *ensemble* of grave, precise and concordant presumptions that he engaged himself to be responsible for a portion of the aforementioned expenses," etc.

Relative to the husband, jurisprudence has been less fortunate, since it has diminished the sentence of adultery so as to make it almost purely theoretical. When a husband brings a divorce on the charge of adultery before the Courts and presents himself at the trial as a witness, he submits to a very trying position, but at least he hopes to be avenged. If society simply accords him a derisive satisfaction, it is to be feared that he might be desirous of adding his vengeance to that of society, and it is more especially to be feared that others will scoff at such a meagre satisfaction in order to render justice themselves.

Mistakes in legislation have always existed, but why should it be that in modern times the consequences of these mistakes should be murder? In the first place these *lacunæ* in the law have not always existed in the same manner. In former times a young woman of quality was far more protected than the modern young woman, from the fact that, shut up in a convent until her marriage, she remained a stranger to daily life. The mistake of a young girl in the eighteenth century, for example, the mistake of a young girl well born, especially, was of an extreme rarity. For that matter seduction is not a gain; far from it; and its consequences would cause one to seriously reflect and make the most amorous very tepid in their desires. In 1737, M. de la Roche-Courbon was condemned to have his head cut off for having seduced Mlle. de Moras in the convent of Notre Dame de la Consolation. Her mother died from a broken heart and he himself fled and, driven out of Sardinia, where he had taken refuge at the house of one of his relatives, M. de Senneterre, the French Ambassador, finished his days miserably. The curate who had given the pair the nuptial benediction was placed in the galleys; the chambermaid of Mlle. de Moras to be whipped, to be branded with the fleur de lys and to nine years' banishment.

Formerly, the husband was not less well armed, although he employed his arms less freely. Ordinarily tolerant, especially during the eighteenth century, the husband shook off his indifference occasionally, wounded less by a sudden jealousy than by the humiliation which the wicked tastes of his wife caused him. Consequently, the older laws gave very severe punishment in cases of adultery between a woman of condition and a man of the people. Muyart de Vouglans mentions a sentence rendered by the Parliament of Paris which condemned a valet to be hanged for having committed the crime of adultery with his mistress, "*quoique celle-ci lui eut donne occasion en se decouvrant immodestement devant lui.*" Fournil mentions the case of a woman of condition, who, taken by surprise in the act of adultery with a car driver, was condemned to be hung, as well as her accomplice, in 1567. Bruneau, another jurisconsult, quotes the case of a wife of a magistrate who was caught in the act of adultery with her servant, and another of the same condition with her husband's clerk, and in both cases the same sentence was handed down. Adultery was in these days reprimanded, not merely with severity, but with cruelty.

During the eighteenth century customs became milder, husbands likewise, and nevertheless when one of them wished to avenge himself the powers given him by law were certainly immense. The wife was taken from her bed in the morning and thrown in a carriage which was drawn under the escort of four armed men and conducted to the Convent du Bon-Pasteur, which was a kind of house of correction. Oftentimes the wife was even taken away during a banquet, brutally snatched away from some pleasure, like, for example, Madame de Stainville, the foolish lover of Clairval, who was seized with all her fineries in the midst of the rehearsal for a ball to be given by the Duchess de Mirepoix; she was separated from her women, her confidential maid was locked up at Sainte-Pelagie and she herself was taken to the sisters of Sainte-Marie at Nancy. Many other notable seizures and imprisonments could be mentioned, but space forbids. These imprisonments of an unfaithful wife in a cloister were the right of the husband during the eighteenth century and he had in his hand these sudden and fearful punishments. In the midst of a relaxation in the morals and of all the complaisance of the society for scandal, he remained armed by the law. A sealed letter, obtained upon the proof of adultery, was sufficient to give him power to place his wife in a convent to the end of her days, if he so chose. Occasionally, having recourse to justice, he had her condemned to two years in the convent, during which he retained the liberty to visit her or take her back, if he chose. When the two years had elapsed the wife was condemned to be shaven and imprisoned in the convent for the remainder of her days if the husband took no steps for reclaiming her.

It must, however, be said that the husbands rarely resorted to the power given them by the law. Then, again, the idea of marital honor, as much in the higher societies as in the popular classes, the idea of honor of the young girl, even, in the popular classes, was less developed at that epoch than in ours. This change should be considered as a progress in morals; a husband indifferent as to his dishonor is always a suspicious person and liable to profit by it rather than otherwise. Public opinion has to-day become infinitely more severe for a man whose love is not disinterested; the husband for this reason must become himself more susceptible for his conjugal honor.

The scandals of the sixteenth century, the cutting sarcasm of Molière, the memoirs of the eighteenth century, prove distinctly this indiffer-

ence which was so frequent under the old régime. We have already pointed out that young girls in the higher walks of life were extremely well protected, while in the popular classes she had little, but the notion of feminine honor must have still been quite confused. Even in the nobility it seems as if at certain epochs it became obscured. De Thou relates that in the sixteenth century, Baleins, Governor of Lectoure, stabbed an officer who had abused the former's sister, by promising her marriage, and that the King of Navarre was frightened by the audaciousness of the assassin and the enormity of his crime. Proal, in his interesting work entitled "Le Crime Passionnel," states that the jury is less frightened than was the King of Navarre at the audaciousness of those who kill from love or from jealousy. This hardly means that human life has less value in the eyes of the people of the twentieth century than those of a great nobleman of the sixteenth century, but the motive which appears so serious to us probably appeared to have no value in the sixteenth century.

The last cause which seems to give to crimes from passion the aspect of ordinary crimes in modern times is our ignorance regarding a large number of crimes committed in days gone by. It is evident that at a time when medicine was in its infancy, poison must have often been employed in this type of crime, and, on the other hand, the brawls in the street were in the older days attributed to robbers, but in reality often served to carry out private vengeance.

We have, relatively speaking, numerous examples of passionary crimes in old law. In the first place we have the tragedy committed in the seventeenth century by two men occupying high social conditions, the Abbé and the Chevalier de Ganges, who both being extremely in love with their sister-in-law, the beautiful Marquise de Ganges, whose portrait was done by Mignard, and furious at being repulsed, they concentrated their efforts to avenge themselves of her disdain. In the night they penetrated into her room, the Chevalier with his sword in hand, the Abbé carrying a pistol in one hand and in the other a glass full of poison, and they forced their victim to poison herself. After she had drank the liquid the assassins waited a few minutes in order to allow the poison the time to produce its effect and to prevent any help being brought their victim. These two assassins, who belonged to the highest society, were condemned to be torn to pieces alive. Under the reign of Louis XIV came the famous Brinvilliers case. The fair assassin not only gave poison to obtain successions, but in order to break off marriages and prepare others. Beside the "*poudres de succession*," there were love powders as well, and it is well known how many and terrible were the revelations made in the ardent chamber. Louis XIV, on account of the scandal to which he would be subjected, was obliged to stop the procedure. Madame de Montespan, more especially, was shown to have asked Voisin for a powder to kill Mlle. de la Vallière, and later another in order to kill the King himself, who had abandoned her, as well as Mlle. de Fontanges, who had become the favorite in her place. She died at the age of twenty-two years, persuaded that she had been poisoned. We only know of these prominent examples, but without doubt there were a large number of crimes committed which have not been recorded, and a great many were in all probability attributed to other motives. They were probably tried as ordinary murders in spite of the opinion of very advanced minds of the epoch, and notably the great lawyer Jousse, who considered love as an excuse and the accomplice of insanity or drunkenness.

Clinical Department.

A CASE OF INTESTINAL TUBERCULOSIS WITH PSYCHONEUROTIC SYMPTOMS.

BY ARTHUR K. STONE, M.D., BOSTON.

THE patient was a young man of twenty-three years of age and a clerk. He had a phthisical family history, but had been separated from his parents from early childhood. His habits were good as regarding the use of stimulants, and he took a fair amount of exercise, belonging to a local military company. From time to time he had to be warned by me that he could not take part too freely in the social side of the organization and do his work at the store. But he had never had any serious sickness. One January he presented himself for examination, complaining that for a period of several months there had been a loss of appetite and a loss of weight. This had been accompanied by a little cough, but without expectoration. The urine showed nothing abnormal. The heart was slow, but not strong. The temperature was 98.8°. At the right apex of the lung there was slight dullness with increased fremitus, spoken and tactile; the respiration was harsh and the expiration was prolonged. During the past two weeks there had been indigestion, but the bowels were in every way regular.

Further questioning elicited the information that he was engaged and expected to be married in the near future. He had purchased a house on a mortgage; later, in attempting to pay for it, had purchased stocks on a margin and had had his margin wiped out. Consequently he was much worried and had had considerable difficulty in carrying his mortgage. On general advice he improved rapidly and his cough disappeared. In March he complained of more indigestion, which increased steadily as the time of his wedding approached. No particular kind of food appeared to bring on distress, but almost everything digested with difficulty until he had his "bachelor dinner," which he ate and drank with relish, and was married the following day and thereafter took his meals without distress, so that early in October he told me that he considered himself perfectly well. On his return after his wedding he, with other of his fellow clerks, bought out the business and started for themselves. The organization and financiering of the business fell principally on my patient's shoulders, and he worked very hard all through the summer and fall, and soon after the first of October began to have occasional attacks of indigestion, not sufficient in importance, however, to lead him to consult me. Immediately after his Thanksgiving dinner, however, he vomited and had chills during the night. About a week later he had an attack of abdominal pain, which was relieved promptly by an

injection. After that, except for cold hands and feet, he did well till Christmas time, when again he had an upset. In January he reported that he had had much pain after eating, coming in severe attacks; that not even liquids were retained, until finally some large fecal masses were passed, after which he would recover slowly. He shortly after went for a trip to Old Point Comfort and during the time there ate freely and without distress. On his return he ate an enormous meal just before leaving the steamer and his unpleasant symptoms returned at once. These attacks of pain, while quite severe at the time, were often very quickly relieved with the administration of a high enema or of hot water with 10 to 15 gr. of bromide added.

Another trouble now appeared, large and loose movements of the bowels with much gas and colic. These movements came usually at about 4 to 5 o'clock each morning and were very annoying, as they disturbed his sleep. The stomach examination gave normal amounts of acid and well digested contents. Seen in consultation with Dr. Hewes, it was agreed that the intestinal indigestion was of nervous origin. The examination of the stools failed to disclose any bacilli of tuberculosis. There was a remission in April, when for several weeks the patient attended to his business, with very little discomfort. Then the pain and diarrhea returned. The patient became emaciated, and irritable at times, turning to his business whenever he had a few days' let-up. Variations in diet appeared to have no apparent effect upon his pain or diarrhea. One day at my office, in an attack of pain, his agony was so great that opisthotonos was brought on, and this weak man balanced himself on his head and heels for some minutes. The pain, however, quickly yielded to a small subcutaneous injection of morphia, given then for the first time. Immediately after this he went to the Baptist Hospital, where he could be out of doors a great part of the time and under good nursing supervision. While there he improved during the first few days and was fairly free from pain. He was seen by one of my colleagues who, after going over the case and considering the question of tuberculosis carefully, expressed the opinion that in spite of his appearance he would consider the case a neurosis unless there was a positive diagnosis to the contrary. That same day the fecal examination enabled me to make a positive diagnosis of intestinal tuberculosis, large numbers of bacilli of tuberculosis being found in the stool.

In the hope that there might be a localization of the processes in the intestine which gave rise to the obstructive symptoms, which at no time could be located at any particular part of the abdomen, at my request Dr. G. W. W. Brewster made an exploratory laparotomy. The first coil of small intestine seen presented evidences of a well marked ulcer and as coil after coil was rapidly lifted, it was evident that the whole small intestine was thickly studded with large tubercular ulcers, and in many places the presence of lymph on the peritoneal surface of the ulcer showed how deep was the ulceration. Just above the cecum there was a thickened mass, where the lumen of the intestine was evidently contracted. This, so far as the hasty examination went, was the oldest lesion and the probable cause of the colic pains, although never had the pains been localized or had there been any tenderness pointing to any particular part of the belly. The wound was immediately closed. The patient died about a week later, a little over a year and a half from the time of the first symptoms.

The case is reported as illustrating the difficulties which may be encountered in deciding between a neurosis and a very extensive pathological process. There was every reason for mental worry and nervous instability. There was the long remission after his marriage, with the return of symptoms after a hard summer's work in financing his new business venture, and the less complete remissions on his vacation and again in March. The irregularity of the attacks of pain, the absence of localizing symptoms, all tended to make the case obscure.

Medical Progress.

PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., AND HARVEY P. TOWLE, M.D., BOSTON.

LIQUID AIR IN DERMATOLOGY.

THE utilization of liquid air in the field of therapeutics offers another example of the adaptation of a discovery made in one branch of science to the purposes of an entirely different branch. The commercial possibilities of liquid air were fully discussed at the time of its discovery but its use as a remedial agent was not thought of. Recently, however, it has been used with striking results in the treatment of a number of cutaneous affections. The advantages claimed for the method are that it is clean and dry, easy of application and that it produces uniform results with a smooth, thin, pliable, scarcely perceptible scar. The expense, the difficulty of keeping the substance and of obtaining a regular supply are disadvantages so great as to have limited the method to a few localities and to a small number of cases.

Trimble describes the properties of liquid air as follows: "Liquid air is the common air we breathe, very much reduced in temperature. It liquefies at 312° F. below zero. The gases that make up the normal air are practically in the same proportion when the air is liquefied. To the eye the liquid seems to be boiling, giving off fumes similar to those of nitric acid. It is slightly opalescent in color and to the touch feels cold and dry, giving a sensation of tingling. It evaporates rapidly, consequently it can be kept but a short time. We have been unable to keep it at the hospital more than two or three days. Its method of transportation is really a great obstacle as it will explode if corked tightly; therefore a small hole is always left in the stopper from which evaporation goes on." At the present time the liquid air is generally kept in a Dewar bulb which is made up of a larger outside bulb inside which is a smaller bulb. To prevent radiation as much as possible the sides of the bulbs are silvered and the air is pumped from the space between the two bulbs until a vacuum is created.

In the use of liquid air advantage is taken of its property of immediately freezing the tissues with which it comes in contact. Whitehouse says of its effects, that "a drop on the sound skin causes a sensation of burning and tingling and, if allowed to remain a moment or two, will cause a blister. In the absence of moisture no slough nor death of tissue takes place, but on a per-

spiring skin contact immediately ensues and a blister is quickly formed; on a denuded or moist surface a slough with loss of tissue follows. A mild and short exposure to the normal skin by means of the spray produces blanching followed by a moderate congestion; a longer exposure thoroughly freezes and anesthetizes the part but, if not distally situated as the ears, toes, fingers, etc., the circulation is slowly restored without affecting its integrity. It is surprising to see how deeply a part may be frozen without ultimately causing any injurious effects.

"In applications with the swab the resulting inflammatory swelling varies in degree with the amount used, the pressure employed and the location and character of the tissues. If these are firm and well nourished it is often very considerable; while if ill nourished or in a senile condition, irrespective of the age of the subject, a large dose will cause little or no reaction."

From the results of various experiments it would seem that liquid air does not destroy bacteria but that it does temporarily inhibit their activity. The results obtained from its use must, therefore, be referred to its action upon the tissues themselves rather than to its bactericidal properties. The application of liquid air with light pressure produces a temporary contraction of the capillaries with anemia, which is succeeded by a dilatation of the vessels with hyperemia and the outpouring of serum, but without destruction of tissue. A prolonged application with hard pressure causes an intense inflammatory reaction and even an obliterating endarteritis and sloughing of the part. It is apparently by reason of these changes that the results recorded are obtained. It is also stated that diseased cells are more quickly and more profoundly influenced which, it will be seen, is analogous to the action of the x-rays. White's explanation of its beneficial action in diseases of bacterial origin is that "the temporary suspension of the vitality of the germs due to the application of the liquid air gives nature an opportunity to completely destroy them, gives the system a chance to manufacture its antitoxin."

Opinions differ as to the amount of pain caused by the applications. Some writers maintain that there is usually but little pain, whereas others state that it is considerable. It seems probable, therefore, that the presence or absence of pain may be dependent upon several factors, such as the age of the patient, the condition of the tissues, the pressure employed and the duration of the application.

All writers are agreed upon the great importance of the technic. Success or failure depends upon the accuracy of the operator in applying the liquid air to the surface, his skill in applying just the pressure which will accomplish his object without causing unnecessary reaction or damage, and his judgment as to the duration of the application, the proper saturation of the swab and how frequently the treatment should be repeated. Liquid air may be applied either by spray or swab. The latter is usually preferred as it can be better controlled. A swab is made of a pine stick long enough to reach to the bottom of the bulb by wrapping absorbent cotton about one end. The cotton is moulded to fit the surface of the lesion to be treated, making it flat or round or oval as the case may demand. The swab is dipped into the liquid air until saturated after which the surplus liquid is allowed to drip off. It is then applied accurately to the surface of the lesion with light, medium or hard pressure, according to the intensity of the effect which is desired. The ability to always use the same pressure seems to be the most difficult part of the technic to acquire. Trimble's description of what is meant by light, medium and hard pressure is, therefore, helpful. He compares "light pressure" to the light touch with which the Paquelin cautery is used in lumbago to produce a slight erythema. "'Medium pressure' is used when the applicator is held upon the lesion with sufficient firmness to prevent its slipping from its place and hard enough to depress the skin slightly." Another point made is the removal of all crusts before making the application. It is also advisable that all moist or denuded surfaces should be covered with a thin layer of gauze in order to prevent the swab from freezing fast to the surface.

In regard to the amount of pressure to be used in the treatment of the various conditions, light pressure of short duration is employed in such affections as lupus, erythematosus and port-wine marks; medium pressure in pigmented and hairy nevi, angiomata, lymphangioma and lupus vulgaris; and firm pressure of considerable duration — twenty to sixty seconds — in the scattered nodules of lupus vulgaris and in epithelioma. Whitehouse advises that in the treatment of epithelioma and rodent ulcer the pressure should be exerted upon the periphery of the lesion rather than upon the center in order to prevent recurrence. He also uses liquid air as a diagnostic aid in distinguishing the pearly cicatricial nodules, occasionally seen on the periphery of a healed lesion, from true epitheliomatous nodules, relying upon the fact that the diseased tissue is frozen while the scar tissue is not appreciably affected.

The time when the application should be repeated demands the exercise of considerable judgment, for if the treatment is given too frequently it intensifies the reaction and causes unnecessary destruction of tissue. It is agreed that the best results are obtained when the operator proceeds slowly. Therefore, it has become the rule to wait until the effects of the first application have entirely passed off before making the second. Some, indeed, wait until the crust resulting from the preceding application has fallen before giving another treatment. It is claimed that if the operator is skillful, superficial affections may be removed with practically no scarring, and deeper affections with a scar which is so thin and pliable as to be scarcely noticeable. It is said that it is only when the applications are too long continued and the pressure too hard that tough, irregular scars result.

A brief résumé of some of the cases reported will give the best idea of the character of the cases in which liquid air is used, the method employed and the results obtained. For example, Trimble reports eight cases of hairy, pigmented nevi. Case I was a boy, aged eleven, with a brown, very hairy, pigmented lesion one and a half inches long and one-half inch wide, situated upon the upper eyelid. After four applications the hair began to disappear, ulceration commenced and a crust formed. Healing took place beneath the crust leaving a practically normal skin. Case II, a girl, aged five, presented on the cheek near the angle of the mouth a deeply pigmented, hairy lesion of the size of a twenty-five-cent piece. Six applications were made, the last causing some inflammation. The result was good, only slight scarring resulting. Case III, girl, aged sixteen; nevus of mouse-skin variety on side of nose, three fourths of an inch long and one-half inch wide, covered with long hair. After seven applications there remained only a healthy scar with slight pigmentation at one point. Case IV, girl, aged six; pigmented lesion on right temple. Three applications resulted in a smooth white scar which was scarcely noticeable. Case V, woman, aged twenty-four; lesion on left lower cheek, pigmented and covered with thick, reddish-brown hairs; size of a twenty-five-cent piece. Five applications removed the lesion with the exception of one small spot in the center. Case VI, boy, aged seventeen; dark brown nevus on cheek, size of twenty-five-cent piece; covered with coarse brown hair. Six applications cured with very mild scarring. Case VII, girl, aged twenty; nevus about the size of a five-cent piece, under the chin; black and covered with coarse black hairs. Entirely removed by seven applications except for one patch the size of the head of a match and with practically no scarring. Case VIII, girl, aged twenty; mouse-skin nevus, size of ten-cent piece, on the shin; central portion verrucous and projecting one-eighth inch above the surface. Four applications cured without remaining pigmentation and without a noticeable scar. All of these cases remained under observation for over a year and none showed any sign of recurrence.

Whitehouse reports three cases of pigmented nevi and two cases of hairy nevi in which his results were similar to those of Trimble. In addition he reports cases of vascular nevi, lupus erythematosus, lupus vulgaris and fifteen cases of epithelioma. As a result of a single application, a *vascular nevus*, the size of the finger nail, situated on the nose, disappeared completely within three weeks, leaving a smooth flat scar. Three months later there was no sign of a return. A port-wine mark on the nose, twice the size of the last, disappeared within three months after eight light-pressure applications, leaving a very superficial, atrophic-looking scar. No return. An irregular vascular nevus over the angle of the jaw and the adjacent part of the neck was removed by six applications and showed no signs of return after two years. In a case of *lupus erythematosus* of three years' duration, one patch on the cheek the size of the thumb nail was cured by three applications and another, slightly larger, indurated patch on the nose by five or six applications with smooth, superficial scars. In a second case a patch of one and a half years' duration, situated on the temple, had been almost completely removed by six applications with moderate pressure, when the patient disappeared. A patch of *lupus vulgaris*, nearly one inch in diameter, of three years' duration, was completely cured by one fairly severe, one moderately severe and two milder applications, leaving a smooth, pliable, but slightly depressed scar. No tendency to recurrence shown two years later. In another case of lupus vulgaris five isolated tubercles remained of a patch which had been previously treated by other measures. Deep boring with a pointed applicator destroyed the tubercles but produced a marked reaction. Sixteen months later there was a questionable recurrence of one tubercle which one application would cure. The fifteen cases of *epithelioma* were of the type commonly seen about the head and face and unaccompanied by glandular involvement. The following will serve as examples. An epithelioma, one quarter of an inch in size, was cured by a single application with firm pressure and showed no recurrence a year and a half later. Two other cases of the same size were also removed by one application. Thirteen months later one showed two pin-head recurrent nodules which were attributed to a tag left attached at the time of the first application. The second showed no return. Several other cases, varying in size from one quarter to three quarters of an inch, were cured by from one to four applications and showed no return in from two to three and a half years. An excavation involving almost the whole width of the lip and extending into the mouth was left by the removal of a fungating growth by Marsden's paste. Nine severe applications of liquid air were then made to the mucous surface. A group of nodules developed on the chin at a distance from the original growth. Two applications were made to the nodules and two to the original growth, making eleven in all. Three months from the first application the whole had healed perfectly with a scar level with the surface. The lip was slightly shortened but the contour was not affected.

The above cases are sufficient, without detailing similar cases reported by other men, to show the striking results obtained by the use of liquid air. Certainly they are not equalled by any other method with the possible exception of excision. Unfortunately the general use of liquid air is impossible because of the very great difficulty of obtaining it. Its employment at present is almost confined to New York, and even there it is sometimes difficult to secure a regular supply. It is to be hoped that some method will be invented which will render its production commercially profitable and thereby bring it within the reach of the profession generally.

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Reports of Societies.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION.

TENTH ANNUAL MEETING, HELD AT ATLANTIC CITY, N. J., JUNE 3 AND 4, 1907.

(Concluded from No. 16, p. 535.)

GASTRIC DISTURBANCES CAUSED BY HERNIA.

DR. MAX BALLIN, of Detroit, Mich., read this paper. He stated that any and every kind of hernia caused more or less gastric or intestinal trouble. The common large inguinal herniæ, if reducible, were responsible for flatulence, constipation, pain in the back and groins; if adherent, all these symptoms became more pronounced. Omental adhesions in a hernial sac could make a patient so miserable by loss of appetite and indigestion that serious loss of weight resulted, and there were cases of supposed malignant disease, where afterwards radical operation of the hernia removed all the intestinal disorders. It should be borne in mind that if in a hernia any adhesions existed between the hernial sac and its contents, a truss would usually aggravate all the symptoms by pressure on the unreduced parts. Generally speaking, in adherent hernia, a truss was contra-indicated. Wherever located, post-operative ruptures were most troublesome to the patient, but Dr. Ballin said that the main object of his paper was to call attention to intestinal disorders caused by small herniæ that were not easily discovered. Of these he considered in detail four kinds, namely: 1. The so-called incomplete inguinal hernia; (2) the small femoral hernia; (3) umbilical hernia; (4) epigastric hernia, in or lateral to the linea alba, and peritoneal lipoma. Under the latter heading he included hernia protruding in or close to the linea alba, between the xiphoid process and the umbilicus. These herniæ occurred very rarely below the umbilicus, and were apparently due to congenital or acquired defects in the linea alba, although some claimed that loss of fat was an important factor in their etiology. Others claimed that just the opposite, adiposity, predisposed to such weakness, the fat replacing to some extent the resistant fibrous tissue. Epigastric hernia and lipoma might exist for many years without causing any symptoms. Then, suddenly, symptoms might arise, the chief one being pain. Usually, these epigastric herniæ, on account of their size and the peculiar lipoma formation and adhesions, were not benefited by trusses and bandages, and a surgical operation was indicated. In conclusion, Dr. Ballin said that many cases of obscure abdominal trouble, colics and vomiting, could be caused by hernia, and that it was very important to look in all such cases for small ruptures. These could be of any of the known varieties, but of special importance in producing gastric symptoms were the small epigastric herniæ and the peritoneal lipomas.

DR. MAX EINHORN, of New York City, said that, according to his experience, these herniæ, especially those of the epigastric variety, were very frequent indeed. He probably saw three or four every week, and he did not think that one half or even one third gave rise to any symptoms. In the majority of these cases he ignored the hernia entirely, and considered it a mistake, sometimes, even to call the patient's attention to its existence.

DR. J. A. LICHTY, of Pittsburg, said he had seen only two cases of epigastric hernia, and in those two instances the patients did not complain of any symptoms referable to the hernia.

DR. J. C. JOHNSON, of Atlanta, said that in a case of epigastric hernia which he saw recently the chief symptom was periodical attacks of pain. This was the only case of epigastric hernia he could recall among several thousand examinations.

DR. G. W. MCCASKEY, of Fort Wayne, said he was greatly astonished at the frequency with which Dr. Einhorn met with cases of epigastric hernia.

DR. A. L. BENEDICT said the statements made by the various speakers in regard to the frequency and infrequency of epigastric hernia showed either the personal equation or a peculiar coincidence. Personally, he saw these cases rather frequently, perhaps one every week or two; some of them good-sized epigastric herniæ; others so small that they could scarcely be called herniæ, but rather epigastric finger-points. He had never seen a single case in which the symptoms could be attributed to the hernia itself.

DR. I. ADLER, of New York City, said he wished to protest against the statement that epigastric herniæ were so very frequent. The stomach symptoms in these cases were not necessarily due to the presence of the hernia. Occasionally, however, an operation on such a hernia would act as a suggestive measure and relieve the symptoms, but there were still other cases where he agreed with Dr. Ballin that an operation was necessary, particularly in those cases where there were inflammatory adhesions.

DR. S. J. MELTZER said it was not only incomplete herniæ that were liable to give trouble, as the simple pressure of the intestines against a patulous internal ring or against some diastasis in the abdominal muscle was not infrequently the cause of such pains, which were always relieved by the application of a well-fitting truss. Doubtless, there were some cases of incomplete herniæ which were not relieved by trusses; but even if a truss was effective, why should a man wear a truss for thirty years or more when he could be radically cured in less than a fortnight?

DR. CHARLES D. AARON, of Detroit, said a case of epigastric hernia which he reported ten years ago was that of a man who had been an invalid practically for fifteen years, because of an epigastric hernia about the size of a marble, with an opening into the linea alba scarcely larger than the point of a pencil. He was completely relieved by an operation. These cases were not the kind where the opening was large enough to admit even the finger-tip, and replacement was impossible.

DR. J. KAUFMANN, of New York City, thought there were cases of epigastric hernia which gave rise to serious trouble and which could not be cured by putting the patients to bed. In any case that was giving rise to symptoms, he would certainly advise an operation.

The discussion was continued by DRS. J. FUHS, of Brookline, G. W. MCCASKEY, of Fort Wayne, and was then closed by DR. BALLIN.

THE GASES OF THE INTESTINE, WITH DEMONSTRATION OF AN ORIGINAL APPARATUS FOR THE COLLECTION AND ANALYSIS OF STOMACH AND INTESTINAL GASES.

By DR. S. BASCH, of New York. The author stated that the study of the intestinal gases possessed interest mainly as a physiological and chemical problem, but the important rôle which they played in a number of

abnormal conditions clothed them, clinically, with more than theoretical interest. As was well known, the intestinal tract, after the very first ingestion of food, was never entirely free from gases. Throughout life there was a constant cycle of production and elimination. Under healthy conditions this balance of interchange proceeded without discomfort or marked disturbance, but if from any cause there was a derangement of its equilibrium, then flatulence, borborygmi, meteorism, tympanites and other conditions, varying in their significance from the merest discomfort to the severest gravity, might result. It was formerly held that the greater portion of the intestinal gases passed off per anum. This view was now known to have been erroneous, and it was conceded that in the healthy individual at least as much disappeared through absorption into the blood and expulsion by the respiratory tract.

Under a mixed diet the prevailing gas formed in the intestine was CO_2. The amount, naturally, was larger under a heavy than under a light form of diet. CO_2, being a product of fermentation, was most abundantly evolved in the earlier stages of both intestinal and fecal fermentation, while the hydrocarbon series, being the result of putrefactive decomposition, developed, in general, later. H_2S also increased as the fermentative changes were replaced by the putrefactive. It could not be quantitatively determined in these gas mixtures, but its presence was demonstrated by exposing strips of filter paper soaked with lead acetate solution to the gas.

Dr. S. J. Meltzer, of New York City, said that, in view of the present tendency to ascribe a lot of trouble to the faulty digestion of proteids, it would be interesting to learn in what proportion the intestinal gases varied when the patient was on a proteid or carbohydrate diet.

Dr. S. Basch, of New York City, in closing, said it had been shown that the carbohydrates were largely responsible for the production of carbonic acid gas, while the proteids were responsible for the production of marsh gas, ammonia and putrefactive gases.

LACK OF GASTRIC MUCUS AND ITS RELATION TO HYPERACIDITY AND TO GASTRIC ULCER.

Dr. J. Kaufmann, of New York, read this paper, in which he emphasized the fact that a lack of gastric mucus should be considered an unfavorable symptom, and that a diminished secretion of mucus and insufficient mucous covering deprived the gastric mucosa of its protection against all harmfuli nfluences and particularly against the digestive activity of its own secretion. The routine examinations of stomach contents had heretofore been principally directed toward the study of the gastric juice and its disturbed secretion. A more careful study of the protective secretion of mucus and its disturbances should be systematically made. We were all familiar with the increase of mucus in certain gastric conditions, but too little attention had been paid so far to the decrease and the lack of secretion of gastric mucus. Dr. Kaufmann said his observations during recent years had convinced him that decrease and lack of secretion of gastric mucus was of frequent occurrence and played an important rôle in the pathology of diseases of the stomach.

Dr. Max Einhorn, of New York City, said he did not agree with Dr. Kaufmann that the symptoms of hyperchlorhydria in achylia gastrica could be explained by this condition of a lack of mucus. The number of cases in which there was an absence of mucus was very large, while the number that complained of symptoms of hyperchlorhydria was very small. There was also another variety of gastric disorder, in which there was a great deal of gastric juice and also mucus, and he could recall a number of cases where the mucus composed fully one half of the gastric filtrate.

Dr. Kaufmann, in closing, said that in his paper he limited himself to cases in which there was a lack of secretion of gastric mucus. An increase of mucus was a subject that he did not discuss at all. A lack of secretion of gastric mucus certainly played an important rôle in the pathology of the stomach, and was deserving of more consideration than it had received thus far.

DEMONSTRATION OF ESTIMATING PERCENTAGE OF PROTEIDS, FATS AND CARBOHYDRATES IN FOOD.

By Prof. Irving Fisher, of New Haven. In connection with this demonstration the speaker stated that there had been previously two methods in use for estimating the proteids, fats and carbohydrates in foods, which might be distinguished as the method of weight per cent and the method of calories per ounce. By the first method the weight of each food is multiplied by the percentage of weight of proteid, fat or carbohydrate which it contains. The products give the weights of the three elements. The total calories were then found by multiplying these weights by the food value of proteids, fats and carbohydrates per gram and adding the results. This method was too laborious to be of much practical service to physicians. In the second method, a table was prepared, expressing in calories the proteids, fats and carbohydrates in an ounce of each given food. This method had the advantage that the proteids, fats and carbohydrates and total fuel value were all measured in the same units, namely, calories. A simpler method than either of the preceding was to form a table giving the per cent of total calories in the form of proteid, fat and carbohydrate. This method had the advantage of being easily visualized by graphic representation, and of lending itself to quick computation, by means of a mechanical diet indicator.

Dr. A. L. Benedict, of Buffalo, said Professor Fisher's demonstration had given a very clear illustration of what small quantities of food the average adult really required, and how much we ate in excess of that amount. To verify that fact, one had only to observe the average diner at his hotel table, where even in the bread and butter that he munched before his meal, and the olives he consumed between the courses, and the fruit and nuts and ice cream he took for dessert, he had eaten more than his daily ration of calories.

STUDY OF URINARY ACIDITY.

Dr. A. L. Benedict, of Buffalo, read a paper on this subject, in which he reported in detail his clinical deductions from a study of the urinary acidity. He was unable to verify the observation that there was an alkaline and an acid tide in the urine in the course of digestion, nor was he able to verify the observation in patients that rheumatism was associated with superacidity. In acute articular rheumatism, the acidity was not as high as we should expect. In numerous observations of the urine he had rarely found it alkaline, nor had he found the decrease in acid units after meals, as we should expect.

AN UNUSUAL CASE OF ULCER OF THE STOMACH.

By Drs. J. M. T. Finney and J. Friedenwald, of Baltimore. In this case the clinical diagnosis of gastric ulcer was made, which was confirmed by the gross findings in the laboratory and subsequently by the microscope. At the operation, a markedly indurated ulcer of the stomach was found, with enlarged glands in the mesentery. The case was thereupon

regarded as one of cancer, and a gastrectomy was done, with the removal of a large portion of the stomach. The case was interesting from the fact that notwithstanding the existence of a markedly indurated ulcer in the stomach, the symptoms which were presented were by no means distinctive of that condition, and even upon direct inspection it could not be differentiated from carcinoma. The speaker emphasized the fact that all indurated ulcerations of doubtful character situated in the stomach should be regarded as carcinomatous, inasmuch as it is impossible in many of these cases to differentiate ulcers from carcinoma by simple inspection; and again, because in a certain number of these cases a carcinoma was apt to develop upon the indurated border of an old ulcer.

DR. J. A. LICHTY, of Pittsburg, said the case reported in this paper was very interesting on account of the fact that some enlarged glands were found in the mesentery. While he was aware of the fact that surgeons were inclined to consider these small enlarged glands in the mesentery as almost positive proof of a malignant condition, and a positive indication for a radical operation, in cases which would formerly have been regarded as benign, he personally did not understand why these glandular enlargements should not be the result of an infection in the presence of a good-sized gastric ulcer, and he was not convinced that they were necessarily an indication of a malignant condition.

DR. J. KAUFMANN, of New York City, said he had seen cases of gastric ulcer which caused enlargement and hardening of glands in the mesentery, and where a gastro-enterostomy was performed and the future development of the case proved that the ulcer was of benign character.

DR. G. W. MCCASKEY, of Fort Wayne, expressed the belief that every indurated ulcer of the stomach, after an exploration, should, if possible, be freely and liberally excised. The frequency with which cancer developed from an ulcer base should not be lost sight of.

THE FACTORS CONCERNED IN THE HEALING OF PEPTIC ULCER.

DR. F. B. TURCK premised this paper upon a reassertion of his former contention, based upon experiments on a large number of animals, that true peptic ulcer had for its most important factor certain alterations in the alimentary canal, with subsequent changes in the blood, characterized by diminution of the normal protective bodies, and that these etiological factors were general in character and not local. The progressive microscopic picture revealed a process of breaking down — the cells themselves jagged and irregular in form, without round cell infiltration, and a disintegrating and diminishing connective tissue structure. When the process of repair was instituted those cells capable of rehabilitation reasserted their physiological activity; those that had been injured beyond recall were carried away by a process of leucocytosis; new material for the formation of connective tissue was introduced, which progressively drew the edges of the ulcer together, acting in constricting bands. Hence the scar that remained. Similar factors that were active in the normal defense of the tissues were also concerned in the process of reconstruction. Processes of repair were impossible without restoration of the normal defenses of the blood.

Dr. Turck's paper was discussed by DRS. S. J. MELTZER, of New York City, and J. C. HEMMETER, of Baltimore.

DEMONSTRATION OF A MODIFICATION OF THE BOAS TEST FOR BLOOD IN THE FECES.

DR. A. L. BENEDICT, of Buffalo, said that gasoline was first added to the feces to extract the fats. Then old, ozenized oil of turpentine was added, and a fresh solution of guaiac. The test was just as delicate as the ordinary Boas test, and a great deal simpler.

THE EFFECT OF DESTRUCTION OF THE SALIVARY GLANDS (BY DISEASE OR EXPERIMENT) ON THE GASTRIC SECRETION. A POSSIBLE INTERNAL SECRETION OF THE SALIVARY GLANDS.

By DR. J. C. HEMMETER, of Baltimore. The speaker stated that his attention was first attracted to this subject by the case of a woman who was suffering from septic parotitis, which involved also the submaxillary and sublingual glands. Repeated examinations of the stomach contents in this case revealed an entire absence of hydrochloric acid and enzymes, with no proteolytic and no milk-curdling effect. Subsequently, the septic parotitis improved, and this was followed in turn by a restoration of the normal gastric juice. This case, Dr. Hemmeter said, brought to his mind the two cases of salivary gland disease and known as Mikulicz's disease, which consisted of a bilateral induration of all the human salivary glands, resembling adenoma, and in which a chemical examination of the stomach contents showed this same deficit of hydrochloric acid and other gastric secretions.

Influenced by a knowledge of these cases, the speaker said he undertook a series of experiments on three dogs with experimental accessory stomachs (Pawlow). After determining the proteolytic and milk-curdling power of the amount of hydrochloric acid in the secretion from the accessory stomachs of these animals, so as to learn what their gastric juice would accomplish under normal conditions, their salivary glands were removed. It was found comparatively easy to extirpate the submaxillary and sublingual glands, but extirpation of the parotid was accomplished with great difficulty on account of the distance it extended backward underneath the skull. Still, even if a portion of the gland was left behind, its usefulness would be destroyed, providing its nerve and vascular connection was severed. It was found that extirpation of the submaxillary and sublingual glands had some deleterious effect on the gastric secretion, but after removal of the parotid the quantity of hydrochloric acid and the proteolytic power of the gastric juice gradually became less and less, until four or five days after the removal of the last portion of the salivary glands, the canine gastric juice no longer gave any evidence of hydrochloric acid, milk-coagulating or of proteolytic power, and the accessory pouch of the stomach secreted nothing but a serous liquid containing a considerable trace of mucin. Upon removal of the accessory stomach there were no evidences of inflammation, and to all appearances the cells of the peptic ducts were normal.

A second series of experiments was then undertaken. An esophageal fistula was produced upon a number of normal dogs, so that they could chew and swallow their food with apparent enjoyment. This food, however, was not permitted to enter the stomach, but was collected at the esophageal fistula and fed to other dogs who had been previously experimented on by having their salivary glands removed, with consequent loss of gastric secretion. The introduction of this food into the stomach of these animals failed to excite any secretion of gastric juice. This experiment proved that the failure of gastric secretion after extirpation of the salivary glands was not due to absence of canine saliva, nor to lack of mastication.

In order to corroborate these findings still further, the salivary glands of a number of healthy dogs that had been recently killed in the course of various experiments were obtained, and ground up with quartz,

and after a rather elaborate process a salivary extract was obtained free from proteid in the shape of a thick, opalescent, gelatinous liquid, which was injected into the superficial veins or peritoneal cavity of the dogs that had lost their power of normal gastric secretion after extirpation of their salivary glands. These injections were followed within one half to two hours by such a resumption of the secretion of hydrochloric acid and ferments that presence of gastric juice could be determined by the ordinary methods. This restoration was only temporary, however, lasting eight or ten hours, the period depending largely on the amount of the extract that was injected. It was also apparent that the injection of this salivary extract had a marked vaso-motor influence; and the speaker said that in his efforts to produce a prolonged secretion of hydrochloric acid he sometimes injected too much, producing a surprising increase of blood pressure. When fed by the mouth, the extract had no effect on the secretion of hydrochloric acid. On the other hand, when injected, it was effective even after all the nerve supply of the stomach had been cut off.

Dr. Hemmeter said he had not been able to isolate from this extract of the salivary glands the active principle, a substance like that obtained from the suprarenal gland.

The speaker also referred to some experiments upon normal human subjects who were one day given a test meal which they were permitted to chew and swallow naturally, and the following day the identical test meal was poured into the stomach through a test tube. A chemical analysis of the gastric juice after the second method of feeding showed a considerable deficit of hydrochloric acid and enzymes. He also referred to Pawlow's psychic secretion. If a hungry dog even saw a piece of meat it had the effect of exciting an immediate flow of gastric juice — the so-called psychical secretion (Pawlow), or *appetit-saft*, which was brought about by the intermediation of nerves.

Dr. S. J. Meltzer, of New York City, said if Dr. Hemmeter's experiments could be verified, a new and interesting condition confronted us. The discovery of Bayliss and Starling established the fact that the secretion of the stomach produced in the duodenum a substance which they called secretin, and which stimulated the secretion of the pancreas. Now, Dr. Hemmeter found that a secretion of the salivary glands was essential to produce a secretion from the stomach. The substance Dr. Hemmeter found in the extract of the salivary glands apparently belonged to the group which Starling designated as hormones.

The discussion was continued by Dr. F. B. Turck, of Chicago, and Dr. J. C. Johnson, of Atlanta, and was closed by Dr. Hemmeter.

GASTRIC ULCER COMPLICATED WITH THE SYMPTOMS OF CHOLELITHIASIS.

Dr. J. A. Lichty, of Pittsburg, read this paper, in which he offered the following conclusions: (1) The diagnosis of uncomplicated gastric ulcer should be made without difficulty. (2) When complications existed, it may be impossible to form an exact opinion of the pathological condition in this region of the abdominal cavity before a laparotomy is done. (3) A careful and methodical anamnesis in these cases is of the utmost importance.

Dr. J. P. Sawyer, of Cleveland, said that for a number of years he had been following up a class of cases in which the symptoms at first were those of a catarrhal gastritis, and then, in the course of a few years, if not cured, they developed an infection of the gall bladder or appendix, as shown at subsequent operation.

THERAPEUTICS OF MINERAL WATERS OF THE FRENCH LICK TYPE IN GASTRO-INTESTINAL DISORDERS.

Dr. G. D. Kahlo, of Indianapolis, read this paper, which contained his observations upon the therapeutic indications of alkaline-saline waters based upon a year's clinical experience at French Lick Springs, and the results of certain experiments made upon healthy subjects, together with a brief description of the water, and a general outline of the treatment. He had found the waters at the French Lick Springs especially valuable in gastric diseases, particularly after the abuse of alcohol, and equally favorable in hepatic disorders and hyperchlorhydria.

Dr. S. Basch, of New York City, said we had in the past made the mistake of sending too many of our patients abroad when we had so many excellent springs in our own country which compared very favorably with those in Europe. Unfortunately, at most of our springs there was a lack of proper attention to detail, not only in regard to the analysis of the waters, but also in regard to the general supervision of the springs. In Europe, the physicians who practiced at such resorts were usually trained in physiology and body metabolism, while in this country that factor was almost entirely neglected. Furthermore, the patients were not kept under proper control. The hotels were usually on the American plan, and the patient did not attempt to restrict his appetite, and often drank the waters in unreasonable amounts. He thought the association should interest itself in this important subject, and by arousing the proper interest, actual results could be obtained.

Book Reviews.

Modern Medicine, Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., Regius Professor of Medicine in Oxford University, England, assisted by Thomas McCrae, M.D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Vols. I and II. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

This system of medicine, for such it deserves to be called, has long been awaited by medical men, both in this country and abroad. If one may judge of the succeeding volumes from the two which have already appeared, there will be no disappointment. Medical writing at the present time is at best difficult. Our knowledge of many diseases is imperfect; our therapeutic resources are in a state of uncertainty, and many departments of medicine are in a continual state of flux. The result is that a system of medicine of so pretentious a character as this edited by Dr. Osler should mark a certain epoch in the history of medical progress, representing as it does the matured opinion of special students in many correlated branches of medical science. It is, however, not to be expected that what is here set down will be forthwith accepted ten years hence, and the demand will surely come for a new and complete revision of the work as it at present stands, or of another to take its place.

The scope of this encyclopedic work on Modern Medicine is comprehensive. Dr. Osler has gathered

together men of acknowledged distinction, both in this country and in England, to contribute to the various volumes. The work concerns itself with medicine alone. The first volume, following an admirable introduction by Dr. Osler, which in happy style discusses from the historical standpoint the evolution of internal medicine, takes up the following subjects: predisposition and immunity; diseases caused by physical agents; diseases caused by chemical agents; diseases caused by organic agents; diseases due to vegetable parasites other than bacteria; diseases caused by protozoa; diseases caused by animal parasites; nutrition and constitutional diseases. Under these main headings twenty-two men write, including such names as Adami, Calkins, Chittenden, Howard, Noguchi, Novy, Stiles and Wright. The articles are, without exception, written with care and with a just sense of personal responsibility, which is not always in evidence in composite writings of this sort. A particularly significant article is that by Adami on inheritance and disease. Wright, of Boston, contributes the article on actinomycosis and allied parasites. The protozoa are discussed by Calkins; questions of nutrition by Chittenden and Mendel, and constitutional diseases by Futcher, Anders and others. It would be invidious to draw particular attention to any one of these admirable summaries of existing knowledge. The volume is liberally, although not profusely, illustrated, and evidently no care has been spared to render the series attractive from the standpoint of the bookmaker's art as well as from the character of the contributions. The second volume, which has appeared within a short time, is concerned with the infectious diseases and numbers eighteen contributors, among whom are James Carroll, Councilman, Hektoen, McCollom, Pearce and Shiga. A melancholy interest will attach to Carroll's article on yellow fever since within a few weeks the news has come of his death, probably superinduced by the voluntary attack of the disease which he incurred during the investigation of the mosquito theory. This volume likewise contains a most admirable series of articles by men whose statements must be regarded with respect. Smallpox by Councilman, influenza by Lord, and typhoid fever by McCrae are among the most significant contributions to this volume. In Councilman's paper on smallpox it is regrettable that the publishers have not seen fit to reproduce on adequate paper the high magnifications of the smallpox parasite. Photographs of the gross appearances of the smallpox eruption are printed on special paper, although almost as satisfactory a result would have been obtained had they been printed in the text, whereas, microscopic sections which absolutely demanded special paper are printed in the text. We refer particularly to the cuts on pages 256 and 258. These cuts are certainly to be regarded as among the most important, not only in this but in any of the volumes, and no pains should have been spared to bring them out in the clearest possible form.

The succeeding volumes, five in number, are promised at short intervals, which is exceedingly desirable in a work of this sort. We shall await their appearance with interest, and we have no question that they will completely fulfil the promise of their predecessors. The book is sure of a wide and sympathetic reading on the part of those desirous of keeping up with the advances in modern medicine, whose time does not permit of recourse to original sources.

A Treatise on the Principles and Practice of Medicine. By ARTHUR R. EDWARDS, M.D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Northwestern University Medical School, Chicago. Illustrated. Pp. 1328. Philadelphia and New York: Lea Brothers & Co. 1907.

It is, perhaps, a little venturesome for an author, however wide his experience may be, to write another textbook on the Principles and Practice of Medicine. The multiplicity of treatises of this sort has, however, not deterred Dr. Edwards from adding another book to the list. In writing the book he has had the definite idea in view of giving prominence to facts rather than to theories, and of studying the conditions of disease as they appear at the bedside rather than in the typical form as so often described in textbooks. While recognizing fully that the science of medicine so far as developed should be adequately discussed, the author urges as the final object of a book of this sort the application of knowledge to the cure or alleviation of disease. Hence, more than usual space has been given to treatment, together with the physiological action of drugs.

The book is divided into twelve sections, dealing respectively with the following subjects: specific infections; diseases of the circulation; diseases of the respiratory tract; diseases of the digestive tract; diseases of the kidney; diseases of the blood; diseases of the ductless glands; constitutional diseases; diseases of the nervous system; intoxication; sunstroke; and diseases due to animal parasites. From this it is seen that the scope of the book is comprehensive, and of necessity many of the subjects are treated in somewhat cursory fashion. The discussion of each disease follows the time-honored arrangement of definition, etiology, symptoms, diagnosis, prognosis and treatment. Authors are frequently quoted in the text, but without reference to their special contributions. We are sorry in this as in other general textbooks of medicine to find in the treatment of diseases of the nervous system no adequate diagnostic aids in the way of a brief statement of the essential anatomical points, particularly in relation to diseases of the spinal cord. Certain diagrams are given, such as appear in the ordinary textbook, but this is not enough to make clear the symptomatology of the diseases which follow. The nervous system in general is rapidly outgrowing the scope of a textbook on general internal medicine.

The book is well illustrated, though not profusely, and without question will find a place of usefulness.

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PHARMACISTS AND PHYSICIANS.

We reproduce with pleasure and we believe with profit to our readers the extract which follows, from an address delivered by Dr. Solomon Solis-Cohen, of Philadelphia, former chairman of the Section on Pharmacology and Therapeutics of the American Medical Association, before the meeting of the American Pharmaceutical Association. These statements are more temperate in tone and more just in appreciation than many which were being made a year or two ago. They are in great measure in accord with our own views as set forth in an editorial published in the Journal, March 1, 1906, and which we have seen no reason to alter.

There is no longer the demand that physicians should not go outside of the pharmacopeia in their prescribing, and in other ways the pendulum, having swung too far in both directions, seems to be reaching a state of oscillatory equilibrium. The manufacturing pharmacist and the dispensing pharmacist are both doing more careful and more useful work than ever before, and increasingly merit in their best representatives the confidence and co-operation of the physician.

Dr. Solis-Cohen spoke as follows:

"For the last few years pharmacists and physicians, working side by side, have set themselves to amend some of their errors and mistakes of the past. It lies not in the mouth of the physician to reproach the pharmacist, nor in the mouth of the pharmacist to reproach the physician. We have erred together, and we are determined to redeem ourselves together. The mere trade in patent medicines, the frauds and fakes and deceits of all kinds, need not here concern us. These are crimes, not errors. There are many other crimes outside of the domain of medicine and outside of the domain of pharmacy, and we have not engaged in a general reformatory enterprise. Other organizations and other agencies exist for such purposes, and in their work some of us, as individuals, are taking more or less active part. But the movement to make the drugs, whether the products of manufacturing houses or the products of individual pharmacists, which are dispensed over the counter upon prescription, — the movement to make these drugs in fact what in name they purport to be, is one in which the organized professions of medicine and pharmacy have a common and lively interest, and in which the physician's patients, the druggist's customers, have the greatest interest of all. I recognize and you recognize — we must recognize — that in the general progress of science, the general advance of discovery, the general improvement of the arts, there must be corresponding progress, discovery, improvement, in the processes of manufacture and preparation of pharmaceuticals. Hence there is abundant room, and, indeed, necessity for the enterprise of chemical and pharmacal manufacturers, whether they occupy the general field of pharmaceutic production or devote themselves to specialties. For example, how can the individual pharmacist undertake to prepare and supply the great group of animal extracts and serums which play such a large part in the therapeutics of to-day? And so with various inorganic chemical compounds, alkaloids and even some galenicals. The retail pharmacist should be skilled and enterprising, but there are many things in modern pharmacy for which the average pharmacist, with his necessarily limited time, space and equipment, must look to some establishment which possesses the proper facilities and is thoroughly organized to do well on a large scale what can only be done imperfectly on a small scale. We all recognize that, and the American Medical Association has taken steps, individual physicians have taken steps, to place the medical profession in proper relation with the great manufacturing houses, both those of just fame in Europe and those which are in so high degree a credit to progressive American pharmacy and to American business enterprise. We want to have the most friendly relations with them all, so that these firms may be encouraged to prepare and to offer to us, for the benefit of our patients, the best and purest and most definite pharmaceutical products. And yet, after all is said on this side of the question, there is still a place, and there must always be a place, honorable and important, for the individual pharmacist, for the retail druggist, — call him by whatever name you please, — for the individual who studies and practices as a scientific art the profession of pharmacy. . . . And now just a word as to the outlook for the future of pharmacy.

"The dependence of the patient upon the physician is reflected in the dependence of the physician upon the pharmacist. It is true that the greatest advances which have been made in medicine are

those of preventive medicine, of hygiene and sanitation. We are aiming to teach people how to live sanely and avoid disease. We aim to teach communities to purify their water, and keep their streets clean, and incinerate their garbage, and isolate those sick of contagious disease, and safeguard their food supplies, and do all other things necessary to provide a wholesome environment for the mass and for the individual. It is also true that when disease occurs we now make increased use of those measures which I have ventured to term 'Physiologic Therapeutics,' that is, methods other than drug giving, air and light, and food and water, and rest and exercise, and immunizing sera and antitoxins and radiant forces and mental influence; in a word, those influences which have been potent in the evolution of man and are most potent in restoring him to his normal condition. Yet beyond the present domain of preventive medicine, and beyond the present domain of physical and mental therapeutics, is a great domain of disease in which alleviation and remedy can be best achieved through those means, which you, members of the American Pharmaceutical Association, prepare and furnish to the physician.

"It is a poor boast to say that one knows only four, or fourteen, or forty, useful medicines. One need not neglect pathology or diagnosis, hygiene or physiologic therapy, in order to learn how to apply every means offered by nature or art, to the relief of suffering and the assistance of recovery. You with your science and your skill, with your knowledge of botany and of zoölogy, of mineralogy and of chemistry, search the world over with patient industry to find means by which the physician may be enabled to relieve the distress and to promote the recovery of his patient; and when a certain molecule that promises to be useful does not exist in nature, the pharmaceutic chemist goes into the recesses of his mind and searches it out there and synthetizes it by his skill, and produces it by his mastery of matter and energy, and gives it to us for an additional weapon in the fight against disease and suffering; and for that we and our patients are thankful. We depend on you, therefore, to prepare for us that which exists in nature, and to find for us that which art — or rather science applied in art — alone can furnish.

"And in conclusion, going back to what I said in the beginning, if you pharmacists and we physicians have made mistakes in trade, or in science or in art, let us get together and amend them. Let us get together not for reproach or recrimination, but for mutual encouragement in well-doing. Thus can we strive shoulder to shoulder for the advance of medicine and for the inseparable progress of pharmacy."

THE RELATION OF TUMORS TO INJURIES.

THE discussion regarding the relation of trauma to the formation of tumors is not likely soon to be laid to rest. As a matter of fact, we really know very little about the matter, and dogmatic statements, one way or the other, are unlikely to advance our real knowledge of the subject. From many points of view it is desirable that some consensus of opinion should be reached regarding this matter, primarily as a possible means of prophylaxis, and secondarily in its practical relation, particularly on the medico-legal side. It is questionable whether any expert pathologist is justified in dogmatically asserting that tumor never arises from trauma, nor could the opposite contention be maintained that trauma is an essential antecedent. It is in just such matters as these that the medical profession is placed in an unfortunate position before the courts, wherein legitimate diversity of opinion is emphasized to meet the special ends of the attorneys.

The *Journal of the American Medical Association* has recently discussed the matter from an editorial standpoint, and reaches conclusions which are likely to be generally accepted, indefinite as they are from the necessities of the problem involved. It appears from this analysis, in which the statistics of various observers are considered, that in a certain number of cases the assumption is entirely justified that tumor formation actually follows trauma, but that the vast majority of new growths are quite independent of any such exciting cause. This tentative position naturally excludes any dogmatic statement in an individual case, whether in the court room or elsewhere; but such an expression of ignorance is certainly more desirable than dogmatic assertions unsupported by facts.

In the same number of the *Journal*, Dr. William M. Leszynsky, of New York, reports a case of intracranial tumor which he regards as directly resulting from traumatism. Following a blow on the head, his patient, a young man, developed unmistakable symptoms of brain tumor from which he ultimately died. The autopsy revealed a spicule of bone projecting from the inner table of the skull through the dura. An endotheliomatous tumor was adherent to this spicule of bone and to the dura, but non-adherent to the brain. Dr. Leszynsky concludes that the trauma was the direct cause of the tumor formation. Such a case as this, however, interesting as it is, does not fully meet the requirements of the situation. Had the original trauma not led to the fracture of bone, there is no probability that tumor would have resulted. The new growth was due rather to the continued irritation of the bone than to the original traumatism, and therefore should not be regarded as a clear example of a tumor due to trauma.

It is not likely that the general question will soon be settled. In the meantime statistics should be widely collected and interpreted wholly without prejudice one way or the other.

MEDICAL NOTES.

Unveiling of Memorial Statue of Prof. Joseph Leidy. — The memorial statue of Prof. Joseph Leidy will be unveiled at 3 P.M., Wednesday, Oct. 30, 1907, at the City Hall Plaza (West Side), Philadelphia. There will be addresses by Mr. Joseph Wharton and Prof. Henry C. Chapman, M.D.

Opening of Philippine Medical School. — According to the *Report of the Bureau of Health* of the Philippine Islands the new Philippine Medical School formally opened its doors to students on the 10th of June, and at the present time 54 young men and one young woman are studying the science of medicine along American lines. The medical department of the Santo Tomas University has been engaged in improving its facilities to meet the competition of the new school. A new dissecting room has been planned and is now under construction, and the laboratory facilities have been increased. These are all hopeful signs and all indicate the awakening of the Philippines.

Alvarenga Prize of the College of Physicians of Philadelphia. — The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1908, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and must be received by the Secretary of the College on or before May 1, 1908.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1907 has been awarded to Dr. William Louis Chapman, of Providence, R. I., for his essay entitled: "Post-operative Phlebitis, Thrombosis and Embolism."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 23, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 44, scarlatina 45, typhoid fever 28, measles 13, tuberculosis 40, smallpox 0.

The death-rate of the reported deaths for the week ending Oct. 23, 1907, was 15.92.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 19, 1907, was 208, against 206 the corresponding week of last year, showing an increase of 2 deaths and making the death-rate for the week 17.80. Of this number 103 were males and 105 were females; 203 were white and 5 colored; 138 were born in the United States, 68 in foreign countries and 2 unknown; 46 were of American parentage, 145 of foreign parentage and 17 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 1 deaths; scarlatina, 48 cases and 0 deaths; typhoid fever, 24 cases and 7 deaths; measles, 8 cases and 0 deaths; tuberculosis, 29 cases and 19 deaths; smallpox, 0 case and 0 deaths. The deaths from pneumonia were 20, whooping cough 0, heart disease 24, bronchitis 4 and marasmus 2. There were 16 deaths from violent causes. The number of children who died under one year was 47; the number under five years, 62. The number of persons who died over sixty years of age was 30. The deaths in public institutions were 59.

There were 2 cases and 2 deaths reported from cerebrospinal meningitis during the week.

Property Acquired by the New England Hospital. — The New England Hospital for Women and Children has acquired a piece of property in Dorchester, which was formerly the estate of Elizabeth H. D. Shepherd.

Appointment of Dr. H. C. Emerson. — Governor Guild has nominated Dr. H. C. Emerson, of Springfield, Mass., as health inspector of the Hampden District, in place of Dr. Richard M. Benner who has resigned.

DINNER TO DR. CHARLES P. BANCROFT. — As a recognition of Dr. Charles P. Bancroft's twenty-fifth year as superintendent of the New Hampshire State Hospital, a number of his colleagues, many of whom had formerly been associated with him in professional work, gave him a dinner, Oct. 15, at the University Club in Boston.

APPOINTMENT OF DR. HENRY A. COTTON. — Dr. Henry A. Cotton, of the Danvers Insane Hospital, has been appointed medical director of the New Jersey State Hospital for the Insane to succeed Dr. John W. Ward, who has recently resigned. During his stay at Danvers, Dr. Cotton has won for himself an enviable position as a psychiatrist. The hospital will lose much by his departure.

BEQUESTS TO HOSPITALS. — By the will of the late Miss Florence Lyman the following institutions are beneficiaries: House of the Good Shepherd, $50,000; Carney Hospital, $30,000; St. Mary's Infant Asylum, $25,000; St. Vincent's Orphan Asylum, $10,000; Massachusetts Charitable Eye and Ear Infirmary, $10,000; Massachusetts General Hospital, for free beds, $5,000, and several other minor charities. The entire amount of public bequests in the will is estimated at $235,000.

DEATHS FROM AUTOMOBILES. — According to a recent report of the Safe Roads Automobile Association, there have been 41 deaths and 313 injuries in Massachusetts from the careless driving of automobiles in the three months ending Sept. 21. In this same period there have been 211 collisions in which automobiles were involved. It is believed that the numbers here given are incomplete, inasmuch, as the tabulation includes only those accidents which find their way into the papers. The report concludes, from the facts obtained, that reckless driving on the part of automobilists is common, that an organization which shall take active measures to prevent such reckless driving is necessary, and that some radical action should be taken to prevent reckless operators of automobiles from continuing in their work. Fifty cases have been investigated by the association and five have been brought before the criminal court. The work of this association should certainly receive the fullest co-operation, not only of the public at large, but also of automobile owners. It is proposed to bring before the legislature a bill requiring operators of automobiles to pass an examination, and it is hoped also to institute certain tests regarding eyesight and hearing.

NEW YORK.

THE SMALLEST ADULT BRAIN ON RECORD. — In making a post-mortem examination of the body of Daniel Ryan, a watchman forty-six years old, who died suddenly, coronor's physician O'Hanlon and Dr. Larkin, adjunct professor of pathological anatomy in the College of Physicians and Surgeons, discovered a brain which is believed to be the smallest in point of weight ever recorded in a normally intelligent adult. It weighed only 24 oz., or scarcely one half the weight of the average brain of adults of similar size and physical condition, while the convolutions were regular and the color normal, and there was no evidence of disease in any part of the organ.

EDDYITES GUILTY OF MANSLAUGHTER. — On Oct. 10 Edwin M. Watson and his wife, of Moorestown, N. J., were found guilty of manslaughter in failing to provide medical treatment for their son, seven years old, who died in May last from pneumonia and cerebrospinal meningitis. They are Christian Scientists and had the services of an Eddyite healer, but a physician was called in only when the child was *in extremis*. The case was tried at Mount Holly, the county town, before Judge John Horner, who reserved sentence as the defendants gave notice of appeal from the verdict of the jury. The maximum penalty for the offence in New Jersey is stated to be fifteen years' imprisonment.

BEQUESTS TO COLUMBIA UNIVERSITY. — It is announced that Mrs. George E. Wheelock has given $5,000 to the Department of Physiology of Columbia University in memory of her husband, and that Mr. B. M. Baruch has given $5,000 to the Vanderbilt Clinic in connection with the Medical Department.

POLLUTED SHELLFISH FROM NEW YORK AND NEWARK BAYS. — After a careful investigation, the New York Bay Pollution Commission and the Pollution Committee of the Merchants' Association report that approximately 2,000,000 bushels of oysters and clams are gathered annually in New York Bay and adjacent waters, where it is estimated that sewage is emptied to the extent of 1,000,000 gallons a day. Many of these are taken annually from Newark Bay, where the estimated sewage discharge is 450,000,000 gallons daily. It is a common practice to take oysters from the salt water and place them in shallow water at the mouth of some fresh-water stream to be "fattened." According to Dr. Daniel Lewis, recently head of the New York State

Health Department and now president of the metropolitan committee, "there is not a square foot of the waters of the harbor that is not polluted with sewage. New York Bay is in a disgraceful condition, and the waters of the bay on the south shore of Staten Island, where most of the oysters and clams are gathered, are nothing more or less than a whirlpool of sewage." Of several thousand specimens analyzed, Dr. Lewis reports that there was not one which did not show traces of sewage. Commenting on the present conditions, Edward Hatch, Jr., chairman of the Pollution Committee of the Merchants' Association, says: "There is only one inference to be drawn from this custom of harvesting oysters and clams from sewage-burdened waters. It does not take a scientist or physician to draw conclusions as to the result of eating poisoned shellfish. With millions of gallons of sewage being poured daily into the harbor of New York and adjacent waters where oysters are grown and fattened, it must be evident that no healthy shellfish can be cultivated, and the consequent menace to the health of the neighboring communities which are supplied from these sources cannot be questioned."

Dispensing Cocaine without a Prescription. — Charles W. Hitch, a druggist, who has a pharmacy in the Borough of the Bronx, was convicted on Oct. 15, in the Court of Special Sessions, of selling cocaine without a physician's prescription, and sentenced to serve six months in the penitentiary. The defendant had been fined twice before for the same offence. One of the strongest witnesses against him was the Rev. J. B. Curry, rector of St. James Roman Catholic Church, who stated that a score of young men and boys in his parish had been ruined by the cocaine habit. He testified that they had procured the drug at Hitch's store and cited a number of instances in which cocaine had been purchased there without any difficulty, without a prescription. Both Father Curry and Health Commissioner Darlington, who was present and took special interest in the proceedings, pleaded earnestly for a jail sentence in the case.

Obituary.

ACTION ON THE DEATH OF CHARLES FOLLEN FOLSOM, M.D.

At the regular meeting of the Boston Society of Psychiatry and Neurology, Oct. 17, 1907, the following expression of the sentiments of the society on the death of Dr. C. F. Folsom was adopted.

"The committee appointed to express the sentiments of this society with regard to the death of Dr. Charles Follen Folsom begs leave to report as follows:

"Dr. Folsom was one of the original and most valued members of the Medico-Psychological Society, the parent of the Boston Society of Psychiatry and Neurology. His thoughtful contributions were always listened to with the attention and respect accorded to an acknowledged authority, and his continued interest in our meetings was felt by all of us as a stimulus to good work. His public labors were fruitful in many benefits to sufferers from disorders of the mind. Not only was he an admirable secretary of the State Board of Lunacy and Charity, but it was due to the recommendations of the special commission of which he was a member that the present State Board of Insanity was established and the insane removed from the almshouses and placed under the direct protection of the state. His brilliant mind, his fertility of resource in the treatment of disease, his deep sympathy for his patients and devotion to their needs, the far-reaching benefits to the insane of the Commonwealth from his enlightened public work, his warm interest in the labors of his colleagues and loyalty to the claims of friendship so won our regard and admiration that we feel his death as a personal and public misfortune.

George F. Jelly.
James J. Putnam.
Henry R. Stedman.

Current Literature.

Medical Record.
Sept. 28, 1907.

1. *Fisk, E. L. *The Therapeutic Value of Apomorphinæ Hydrochloridum.*
2. *Ebstein, W. *Obesity, Gout and Diabetes Mellitus Considered as Diseases of Cell Metabolism Transmissible by Inheritance.*
3. Hart, T. S. *The Relationship of the Life Insurance Company to the Applicant Showing Glycosuria.*
4. Castelli, E. *The Clinical Significance of the Symptom Headache.*
5. Kelsey, C. B. *Is There a Surgical Treatment of Constipation?*

1. Fisk urges the use of apomorphine for its expectorant properties. He finds it efficient and harmless, even in relatively large doses, when taken by the mouth. When given by mouth its effects are widely different from those obtained by hypodermic use of the drug. Hypodermically it is a most valuable centric emetic in doses of from one twentieth to one sixtieth of a grain, acting quickly and gently. The possibility of depressing effects should be borne in mind when it is given to children, and strychnine should be combined with it. By mouth it has little emetic effect, but acts as an efficient expectorant in doses of one eighth of a grain every two hours. It does not increase the effect of other narcotics. It should not be used when there is abundant expectoration. Crystalline apomorphine is to be specified, since the amorphous form is uncertain in its effects.

2. Wilhelm Ebstein, of Göttingen, places obesity, gout and diabetes mellitus in one group, that of hereditary diseases of cell metabolism. The close relation of the three diseases is evident, and the frequent occurrence of all in the same subject. All are to be traced to a certain

deficiency in cell activity. The victim of obesity is unable to consume the fatty acids that result from metabolism in the same degree as a normal individual. The cause of gout is to be sought for in a disturbance of the intermediary stage of metabolism, especially that of the nucleins, growing out of inherited tendency. Diabetes shows a deficiency of carbonic acid excretion, the property of this gas to inhibit the action of diastatic enzymes making it a regulator of the formation of sugar from the glycogen stored up in the body. The sugar is more or less completely excreted before it can be assimilated by the organism. These diseases are seen to result from a primary defect of the cells, and each one may be traced to a change in the biogens different in localization and character.

NEW YORK MEDICAL JOURNAL.
SEPT. 28, 1907.

1. CARLTON, E. P. *Dermatitis Exfoliativa Neonatorum (Ritter's Disease).*
2. KNOPF, S. A. *In Memoriam of Prof. J. J. Grancher, of Paris, France, 1843–1907.*
3. BELLANTONI, R. *Autodermic Grafting of the Hand for Deforming Cicatrix.*
4. WILLSON, R. N. *How Far may the General Practitioner Employ and Benefit from Laboratory Methods of Diagnosis.*
5. WELLS, W. A. *Aural Vertigo and Meniere's Syndrome.*
6. HILL, C. D. *Materialism in Medicine. A Plea for the Patient.*
7. SCHRAM, C. *Chronic Myocardial Disease.*
8. KOONTZ, F. L. *Adynamic Ileus.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
SEPT. 28, 1907.

1. *ANDERS, J. M. *Hemoptysis Due to Tuberculosis.*
2. *HEKTOEN, L. *Systemic Blastomycosis and Coccidioidal Granuloma.*
3. GOLER, G. W. *Municipal Regulation of the Milk Supply.*
4. DARLINGTON, T. *The Methods of Dealing with the Milk Supply of New York City.*
5. *JORDAN, J. O. *Boston's Campaign for Clean Milk.*
6. MAGRUDER, G. L. *The Milk Supply of Washington, D. C.*
7. *LEONARD, C. L. *Some Advances in Renal and Ureteral Diagnosis.*
8. GARCEAU, E. *The Surgical Treatment of Ureteral Calculus in the Female.*
9. HARRIS, P. A. *The Early Diagnosis of Tubal Pregnancy.*
10. BRANSON, L. H. *The Syncytium.*
11. *WHITE, C. W., AND PRÖSCHER, F. *Spirochetes in Acute Lymphatic Leukemia and in Chronic Benign Lymphomatosis (Hodgkin's Disease).*

1. Hemoptysis in tuberculosis has for its etiology either congestion or erosion of vessels or rupture of miliary aneurisms. Hemoptysis is much more frequent in cases with chronic heart disease. However, the general assumption that early bleeding is from congestion is incorrect. There are probably minute erosions. The exciting factors are hemorrhagic tendency, aggravation of cough, muscular exertion and mental excitement. Hemoptysis occurs in probably 60% to 80% of the cases of pulmonary tuberculosis and always tends to recur.

2. Hektoen discusses a tabulated summary of the recorded cases of systemic blastomycosis and coccidioidal granuloma. These diseases are caused by closely related varieties of organisms, which are very similar culturally. In living tissue both exist as spherical bodies. However, the organisms of blastomycosis multiply almost wholly by budding, while those of coccidioidal granuloma multiply essentially by endogenous sporulation. Neither forms mycelium in the animal body. Coccidioidal granuloma tends to involve lymph glands, and its nodular lesions resemble the typical specific tubercle. Blastomycosis does neither. The diseases are rare and nothing is known of the circumstances of infection.

5. The foundation of Boston's campaign for clean milk was the adoption of a standard limiting the number of bacteria to 500,000 per cubic centimeter and prohibiting the sale of milk having a temperature over 50° F. By these means unclean milk has been traced to its source. The ultimate aim of cleanly conditions for milk from the cow to the customer and the refrigeration of all milk is hoped for.

7. Leonard considers that the Roentgen technic has been so perfected and that method of diagnosis so firmly established, that no renal diagnosis is complete or treatment rational, where calculus is suspected, without its employment by a competent and experienced Roentgenologist. In a series of 356 cases, the total error has been less than 3%.

11. White and Pröscher in their second communication report the presence of spirochetes in the glands during life in two more cases, one each of acute lymphatic leukemia and Hodgkin's disease. [R. I. L.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.
AUGUST, 1907.

1. JELLIFFE, S. E. *Signs of Pre-Dementia Precox: Their Significance and Pedagogic Prophylaxis.*
2. TINKER, M. B. *The Surgical Treatment of Goiter.*
3. ASHHURST, A. P. C. *Tendon Transplantation in the Treatment of Congenital and Acquired Talipes.*
4. VAUGHAN, G. T. *Further Remarks on the Care of Gunshot Wounds of the Abdomen.*
5. *REYNOLDS, E. *The Causes and Treatment of Sterility in Women.*
6. *VON RUCK, K. *The Influence of Tuberculous Ancestry on the Prognosis in Pulmonary Tuberculosis.*
7. *WHITE, E. H. *The Pathology of Adenoids and Adenoid Hypertrophy.*
8. REARDON, T. J. *Congenital Laryngeal Stridor.*
9. REIK, H. O. *When Shall We Advise Tympanomastoid Exenteration in the Treatment of Suppurative Otitis Media, and in What Percentage of Cases may We Expect a Cure?*
10. BRICKNER, S. M. *Some Causes of Failure in Plastic Operations on the Female Genitalia.*
11. POSEY, W. C. *Chronic External Ophthalmoplegia.*
12. GORDON, A. *The Second Anatomical Proof of the Value of the Paradoxical Reflex.*

5. Reynolds regards the treatment of sterility in women as less unsatisfactory than it has usually been supposed. One reason why treatment fails of results in many cases is that in not a few the defect is in reality in the husband. Where the woman is really sterile, the sterility may be due to a variety of causes, but in a vast majority of cases it is due to an alteration of the secretions of one or another part of the genital tract, rendering them hostile to the ovum or to the spermatozoa. Such abnormality of secretions may be counted among the remediable causes of sterility. Acidity of the uterine or excessive acidity of the vaginal secretions may occur either separately or in combination, to be detected by testing with litmus. The acidity is due to constitutional disorders, to pelvic congestion or to bacterial activity. In treatment, general dietetic treatment is indicated to correct abnormal constitutional states, depletion by glycerine suppositories to relieve congestion, and disinfection of the vagina by insufflation of protargol powder to produce desquamation of the vaginal lining.

6. Von Ruck calls attention to the diversity of opinions as to the influence of tuberculous ancestry upon the prognosis in pulmonary tuberculosis. He reports statistics which he has gathered bearing upon the question. It has long been taught that tuberculous ancestry renders the prognosis less favorable. More recently, however, certain authors have disputed this, maintaining that tuberculous ancestry even tends to produce a slight degree of immunity. Von Ruck has studied the statistics of the German Imperial Health Bureau and those of the Winyah Sanitarium, and finds in both (the total data comprising over four thousand cases) that tuberculous ancestry was somewhat more frequent among patients discharged as cured than among those who failed to improve.

7. White shows that primary tuberculosis occurs in a certain proportion of all cases of adenoid hypertrophy, probably in about 5%. Thus adenoids, as well as tonsils, are to be considered as important channels of infection in

tuberculosis of cervical glands. They may sometimes also be the channels of infection in the development of pulmonary tuberculosis, through the peribronchial glands, but their importance is probably greater as predisposing causes of infection of the lungs, by means of the catarrhal inflammations of the upper respiratory tract which they produce. [F. W. P.]

ANNALS OF SURGERY.

OCTOBER, 1907.

1. *HALSTED, W. S., AND EVANS, H. M. *The Parathyroid Glandules, Their Blood Supply and Their Preservation in Operation upon the Thyroid Gland.*
2. *POOL, E. H. *Tetany Parathyreopriva.*
3. EGGERS, C., AND MAURY, J. W. D. *Observations upon a Form of Exophthalmic Goiter Occurring in a Dog.*
4. *GREEN, N. W., AND MAURY, J. W. D. *Experimental Studies upon the Thoracic Esophagus, a Preliminary Report.*
5. *LEGGETT, N. B., AND MAURY, J. W. D. *Studies upon the Function of the Pylorus and Stomach after Gastro-enterostomy has been Performed.*
6. *MAURY, J. W. D. *Is Death in High Intestinal Obstruction Due to the Absorption of Bile?*
7. *BLAKE, J. A., AND BROWN, R. M. *Studies in Intestinal Exclusion.*
8. *BEER, E., AND EGGERS, C. *Are the Intestines Able to Propel Their Contents in an Anti-Peristaltic Direction?*
9. *LEGGETT, N. B. *Rectal Anesthesia; Experimental Studies together with a report of its Practical Employment at Roosevelt Hospital.*
10. DUNHAM, T. *Tuberculins and the Tuberculo-Opsonic Index.*
11. ELSWORTH, R. C. *Tumor of the Cauda Equina Removed by Operation; Recovery.*
12. *OCHSNER, E. H., AND ROTHSTEIN, T. *Multiple Exostoses, Including an Exostosis within the Spinal Canal, with Surgical and Neurological Observations.*
13. *DE AMEZAGA, G. *Tuberculosis of the Elbow; Arthroplasty.*
14. SHELDON, J. G. *Old Unreduced Posterior Dislocations of the Shoulder.*
15. *STONE, J. S. *Partial Loss of the Tibia Replaced by Transfer of the Fibula, with Maintenance of both Malleoli of the Ankle.*
16. COOK, P. H. *Fracture of the Tarsal Scaphoid Bone.*

1. From an anatomical investigation into the source of the blood supply of the parathyroids, Evans concludes that (1) the parathyroid glands are always supplied by definite parathyroid arteries, which enter them, in each case, at the hilus; (2) the parathyroid arteries, superior and inferior, usually arise from the inferior thyroid, but frequently they take origin from the anastomosing channel between the inferior and superior thyroid vessels; (3) but few if any direct vascular connections normally exist between the parathyroid glands and the connective tissue envelope of the thyroid. In order to preserve the parathyroids in operation upon the thyroid, Halsted advises an operation of "ultra-ligation," *i. e.*, ligation beyond the origin of the parathyroid arteries. After division of the hyoid muscles, the upper portion of the lobe of the thyroid is grasped and traction made forward and towards the middle line. This exposes the superior thyroid vessels, which are tied as close to the thyroid gland as possible. All hemorrhage should be scrupulously avoided, in order that the parathyroid be not obscured. Before and after operations for Graves's disease, Halsted advises chilling or freezing the neck in order to delay, or even prevent entirely, the toxemia which so often follows operation in these cases.

2. Pool reports a case of tetany occurring in a woman thirty-three years of age, on whom he performed partial thyroidectomy, three years after a previous operation on the thyroid had been done. During the operation, the inferior thyroid artery was tied. Four days later tetany occurred in the hands, in the face muscles and in the feet and calves. Some improvement resulted from the administration of Beebe's nucleo-proteid, several attempts at transplantation of fresh parathyroids into the abdominal wall or the lobe of the ear having been without avail. He gives an exhaustive review of the whole subject of tetany following removal of the parathyroids.

4. By the use of positive pressure, through a canula, Green and Maury have been able to perform gastro-esophageal suture by the transpleural route. Dogs were used in the research. The protection of the pleural cavity from infection must be complete. When the point of resection was near the cardiac end of the stomach, this was accomplished by pushing down the gastro-esophageal wound into the abdominal cavity, so that the omentum might apply itself to the wound area, as in any intestinal operation. No difficulty was experienced in keeping the lung well inflated.

5. The authors have investigated the question as to whether, following gastro-enterostomy, solid food leaves the stomach by way of the pylorus or through the artificial stoma. A dog was allowed to swallow a small bullet tied to a string and imbedded in meat. In one instance, this bullet travelled through the stoma and backward through the pylorus again into the stomach. In other instances the food passed by way of the pylorus. Also from their observation of the lacteals after the feeding of fat it would seem that the fat left the stomach by way of the pylorus. These observations, to be made more complete later, bring out the point that a gastro-enterostomy in the presence of a patent pylorus may be functionless.

6. Maury has demonstrated on dogs, that following a gastro-enterostomy by the twine triangular stitch, if the duodenum be closed at a point within about 35 cm. of the pylorus, the animal will die in from seventy to one hundred hours. If this closed duodenal loop be made longer, however, the animal will live. The condition of the stomach and intestines, whether empty or not, is without influence, thereby ruling out death from decomposition of food. It seems probable that death in these cases is due to the absorption of toxic elements in the bile, which are normally rendered harmless by dilution and colloidal suspension in the secretions of the small intestine; as the length of the small intestine from the bile duct to the site of obstruction decreases, the diluting secretions decrease, and the toxicity rises.

7. Blake and Brown find that after total exclusion of a segment of the large intestine, leaving it in the abdominal cavity, it will continue to distend from accumulation of excretions and its walls will hypertrophy. Distention, in a case operated on, continued until perforation occurred with subsequent abscess formation. It is evident, therefore, that total occlusion, even of a segment of the large intestine, is an unwise procedure.

8. The authors show by a series of twenty experiments on dogs that the intestine can propel its contents in an anti-peristaltic direction. They reversed loops of the small intestine of various lengths, and later observed them by direct inspection. Anti-peristalsis was observed both in the large and the small bowel.

9. Leggett reports 31 cases of rectal anesthesia, performed according to the method of Cunningham. A valuable modification of Cunningham's apparatus consists of an exhaust tube, by which the rectum may be emptied at any desired moment. Properly used, this method of producing narcosis is of great value in selected cases.

12. The case studied by Rothstein, and operated on by Ochsner was as follows: A man, twenty-three years of age, presented 108 exostoses at numerous portions of the skeleton. Combined with these, there was pain on suddenly rotating the head; and motion of the right arm and hand and tactile sense of the left arm were somewhat impaired. He could not place his feet exactly where he wished them, especially his right one. This leg dragged more than the other, and the right hip seemed stiff. Neurological examination made it evident that there was a lesion in the right half of the cord, between the base of the skull and the upper border of the fifth cervical vertebræ. Under ether, a large exostosis was found springing from one of the lamina of the axis, and growing into the spinal cord. Two weeks after removal of this, motion began to return in the right half of the body, and since that time, sensation and motion have slowly but gradually improved.

13. De Amezaga reports a case of successful arthroplasty for tuberculosis of the elbow joint in a girl of eighteen. This was done after a previous resection of the joint. As an end result there was a shortening of about

four inches in the affected arm. Rotation and supination were perfect, as were also the motions of the fingers. The joint could be flexed to 35°, and extended to 150½°. The advantages of such an arm over the ordinary flail joint are evident.

15. Stone reports the case of a boy of five years, in whom, following destruction of the tibia by necrosis, he transplanted the fibula with complete functional success. The upper end of the fibula was first attacked and mortised into the lower end of the tibia. Subsequently the lower end of the fibula was split and united to what remained of the lower epiphyseal end of the tibia. This transferred bone increased rapidly in size, so that two years and eight months after the tibia had been removed the leg was functionally good; both external and internal malleoli had been preserved; there was no tendency to either talipes varus or valgus, and there was a shortening of only one and a half inches. [W. C. Q.]

THE LANCET.
SEPT. 28, 1907.

1. *ROLLESTON, H. O. *Some Problems in Connection with the Adrenals.*
2. ROSS, R. *The Prevention of Malaria in British Possessions, Egypt, and Parts of America.*
3. BUCKNALL, R. T. H. *A New Operation for Penile Hypospadias.*
4. SMITH, G. E. *On the Displacements Produced by Pleural Effusion.*
5. CARWARDINE, T. *Excision of the Parotid Gland with Preservation of the Facial Nerve; its Possibility.*
6. IRELAND, W. W. *The Increase of Diseases of the Nervous System and of Insanity.*
7. MIDELTON, W. J. *The Treatment of Rheumatoid Arthritis.*
8. HARRIS, A. *Notes on Certain Fatal Forms of Pharyngeal Diphtheria.*
9. *MORTON, R., AND JONES, E. *The Treatment of Mammary Carcinoma by the Local Injection of Pancreatic Ferments.*
10. PUTNAM, J. W. *A Clinical Study of Paralysis of Sudden Onset and Wide Distribution: Five Cases of Landry's Paralysis; One Case of Acute Infectious Multiple Neuritis; and One Case of Myasthenia Gravis.*

1. Rolleston, in considering the adrenals, speaks first on the functions and histology of the cortex, and then on those of the medulla. As regards the cortex, there are three views: (1) that it is connected with growth, especially of the sexual organs; (2) that it exercises an antitoxic function; and(3) that it plays some part in the elaboration of the internal secretion of the medulla. Of these views by far the most definite is that it is co-related with sexual growth. The cells of the medulla provide a substance — adrenalin — which acts on the sympathetic nerve endings. The pathological relations of the internal secretion of the medulla he divides into alteration in quantity (absence, diminution, or excess), and alteration in quality. Complete absence is met with in Addison's disease; diminution in amount of secretion is found in chronic wasting diseases with low pressure, and in certain acute contagious diseases (especially in children) where there is acute degeneration and hemorrhage into the adrenals. Of excessive secretion little is known. It has been thought that the high tension of some forms of chronic nephritis and arteriosclerosis is due to a hypersecretion of adrenalin. In regard to alteration in the quality of the adrenal secretion little or nothing is known.

9. Morton and Jones report four cases of mammary carcinoma in which there were post-operative recurrences. In each case the trypsin injection treatment was carefully tried. In no case were there any beneficial results, but in two they believe death was hastened and the patient made more uncomfortable. [J. B. H.]

BRITISH MEDICAL JOURNAL.
SEPT. 28, 1907.

1. HORROCKS, P. *The Instruction of Midwives in the Symptoms and Signs of Abnormal Labour.*
2. DICKSON, W. E. C. *Acute Streptococcal Septicemia Occurring at the Menstrual Period.*
3. DANBER, J. H. *A Consideration of Some of the Factors which Contribute to Success in Abdominal Operations.*
4. WILSON, A. J. *A Case of Primary Epithelioma of the Vagina, Showing Auto-inoculation or Contact Infection.*
5. SHAW, T. C. *Progress in the Treatment of Mental Diseases.*
6. *MOTT, F. W. *A Discussion on Alcohol and Insanity.*
7. MERCIER, C. A. *Three Cases of Periodic Dementia.*
8. PETERSON, F. *The Galvanometer as a Measure of Emotions.*
9. ROBERTSON, G. M. *On the Presence of a Bacillus in the Blood of Persons Suffering from General Paralysis of the Insane.*
10. CANDLER, J. P. *An Investigation into the Incidence of Diphtheroid Organisms in General Paralysis of the Insane.*
11. WOODS, J. F. *A Discussion on Hypnotism.*
12. SCHOFFIELD, A. T. *The Teaching of Psychology in Medical Schools.*
13. MUMMERY, P. L. *Prolapse of the Rectum in Children, with Fifty Cases.*
14. PINCHES, H. I. *Retropharyngeal Abscess.*
15. DEAN, H. R. *Observations on the Purpura of Children.*
16. *LANGMEAD, F. *The Acetonemic Conditions of Children.*
17. CORNER, E. M. *Interscapulo-Thoracic Amputation.*
18. GRAY, H. T. *Some Cases which Meckel's Diverticulum was Present.*

6. Mott discusses the various forms of alcoholic insanity, and the relation of alcohol to insanity in general. He calls attention to the effect of alcohol and syphilis as co-workers in producing mental derangement and insanity, and believes that although alcohol may to a certain extent kill off the weaker types and so improve the race, its effect in increasing venereal disease and especially syphilis is far more important in the opposite direction.

16. Langmead divides patients in whose urine acetone may be found into three groups: (1) those showing no symptoms of acidosis, such as cases of starvation, high fever, gastric ulcer, malignant disease, etc.; (2) those who, while the subjects of other morbid states, have also symptoms of acid poisoning which may to a certain extent be masked by those of the primary condition. Such are patients with diabetes, intracranial disease, sepsis, acute peritonitis, and certain forms of poisoning as morphine and sodium salicylate; (3) patients who suffer from uncomplicated acidosis which *per se* may terminate fatally. Of this there are two forms: (*a*) delayed anesthetic poisoning, (*b*) recurrent, cyclical or periodic vomiting. His remarks are confined to the last group. He reports 5 cases in detail and concludes: (1) Acetone and diacetic acid may be present in the urine in a number of conditions without symptoms; (2) cyclical vomiting and delayed anesthetic poisoning are examples of acidosis of unknown origin; (3) delayed anesthetic poisoning is due not so much to the kind of anesthetic as to the state of anesthesia; (4) the determining cause of acidosis is the accumulation of the precursors of acetone, either from excessive formation or deficient excretion; (5) anesthetics are dangerous to patients who are the subject of acidosis. [J. B. H.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. NO. 33.
AUG. 13, 1907.

1. ALZHEIMER. *The Indications for Premature Delivery in the Temporary Insanity of Pregnancy.*
2. *NIETER, A. *The Existence and Significance of "Typhoid Bacilli Carriers" in Insane Hospitals.*
3. *ACH, A. *Lumbar Anesthesia.*
4. STICKER, A. *The Successful Transplantation from One Dog to Another of a Spindle-Cell Sarcoma.*
5. CREWER, M. *Registration of Minimal Electric Currents in the Human Being by Means of the String Galvanometer.*
6. HEINCKE, H. *A Case of Rupture of the Rectum.*
7. BERBLINGER, W. *Traumatic Intraperitoneal Rupture of the Bladder, Laparotomy, Recovery.*

8. *Voeckler, *T. Traumatic Injuries of the Abdomen.*
9. Seggel, *Multiple Tumors of the Brain.*
10. Fraenkel, M. *Comparison of the Spectroscope and the Modified Weber's Method as Tests for Blood in the Stools.*
11. Neustätter, O. *Observations made during a Mediterranean Trip.* (Concluded.)

2. Nieter reviews an outbreak of typhoid among the nurses in his insane hospital, for which no cause in food or water could be found. In the ward, however, in which the infected nurses worked, an inmate was discovered whose stools constantly contained both typhoid and paratyphoid bacillus and who was undoubtedly the source of infection. The author then reviews the reports of 13 other such outbreaks, where the infection was traced to the stools of an inmate, who had had typhoid years before. He believes that the bacilli remain for years in the gall bladders of the "bacilli carriers," and are thence discharged into the intestine, and evacuated with the stools. In every outbreak of typhoid, especially in institutions where no other cause can be found, a search for such a "bacilli carrier" should be instituted. [There are a number of cases in the literature in which typhoid bacilli have been demonstrated in the gall bladder long after the primary infection.]

3. Ach gives a careful résumé of the early work on lumbar anesthesia by cocaine, which proved far from satisfactory, on account of the high percentage of deaths and permanent paralyses resulting from its use. Since the introduction of stovain, and later of tropacocain, this danger has been greatly lessened, the author having used tropacocain anesthesia in 250 cases without a death, without any permanent bad results, and with only 20% of unpleasant after effects. He describes minutely the technic of the procedure, and the course and duration of the anesthesia. He is convinced that in a large number of cases it is much to be preferred to ether and chloroform anesthesia.

9. Voeckler reports a case of rupture of the liver and pancreas, with operation and recovery. He discusses at length the symptomatology in such cases, and concludes that every case of severe trauma followed by symptoms of "shock," or in which the pain, prostration or vomiting increases, or wherein a shifting dullness appears in the belly, after injury, should be explored at once. The diagnosis in these cases is never easy, and it is safer to operate on a slight suspicion, than to hold off until too late. The author favors packing the rupture, as the quickest and surest method of stopping the bleeding, though in suitable cases deep sutures through the liver tissue may be used. With early surgical interference rupture of the liver should become a less hopeless condition than it is now considered. [R. D.]

Zeitschrift für Klinische Medizin. Bd. 63. Heft 5 and 6.

1. *Jürgens. *Clinical Observations on Pneumonia.*
2. *Gigon, A. *The Laws of Sugar Excretion in Diabetes Mellitus. Third Contribution: Metabolism Experiments in a Case of Pancreatic Diabetes.*
3. Pincussohn, L. *The Metabolism of Cocoa in the Organism.*
4. *Plesch, J. *Chromophotometer, a New Instrument for the Estimation of the Concentration of Color Solutions, Especially for the Determination of Hemoglobin Concentration and the Total Mass of the Blood during Life.*
5. *Bourmoff, Th., and Brugsch, Th. *The Neutrophile Blood Picture in Infectious Diseases.*
6. *Kuhn, E. *The Treatment of Carcinoma with Pancreatin, Radium and X-Rays.*
7. *Meyer, F. *The Bacteriologic Diagnosis of Typhoid.*
8. *Geelmuyden, H. C. *Maltosuria in Diabetes Mellitus.*
9. Brodzki, J. *Urotryptic Ferments.*
10. Janowski, W. *Dicrotism in Aortic Insufficiency.*

1. For several years in Kraus's clinic in Berlin cases of pneumonia have been studied by means of the x-ray. The results of many of these observations are here reported by Jürgens, and a number of illustrative cases are cited. It is pointed out that a shadow may remain for a considerable time after the crisis, indicating that resolution in the lung has been delayed, but eventually the shadow entirely disappears, showing that resolution has been complete. On the other hand in cases in which organization follows the consolidation, the picture is different. Here the intensity of the shadow does not decrease, though its extent may diminish as the newly-formed connective tissue contracts. With delayed resolution there is a very uniform clearing of the shadow, while with organization parts clear up and other parts remain dark. In the former there is usually no fever. Both these conditions may escape detection by auscultation and percussion. The development of a pneumonic process as studied by the x-ray shows some points of interest. In some cases, apparently the exudation may clear up without there being any demonstrable change in the percussion note. Sometimes the process advances very rapidly, at other times slowly and gradually. In some cases about a pneumonic area lines of consolidation may radiate out into the neighboring tissue before the surrounding part becomes uniformly consolidated. It is possible that this may represent extension along lymphatics. The decrease in diaphragmatic movement associated with pneumonia of the upper lobes is very distinctly shown by the x-ray examination. The development of pleuritis with pleural adhesions also can be followed. The development of gangrene and abscess was followed in some cases. In particular one case was studied in which a cavity as large as an apple developed as a result of gangrene, and the healing of this cavity was traced until it entirely disappeared, leaving only a small scar behind. Probably of more interest than the preceding were the observations in regard to the relation of tuberculosis to apical pneumonia. It has been long recognized that the prognosis with pneumonia of the upper lobes is not so good as when the lower lobes are involved, and that particularly in these cases is tuberculosis apt to follow the pneumonic process. The exact relation of the bacillus tuberculosis to the pneumococcus in pneumonia has remained a matter of dispute. By means of the x-ray Jürgens has been able to follow a pneumonic process in its resolution and see subsequently the gradual extension of a tuberculous focus in the same area. At times after the pneumonic process had almost disappeared the lung field would remain clear for several weeks and then there would be a quite rapid extension from a small area of consolidation, and this was shown by sputum examination to be tubercular in origin. This author believes that in most cases the tubercular infection has preceded the pneumococcus infection, and that the tuberculosis spreads rapidly as a result of the lowered resistance of the tissue produced by the preceding pneumonia.

2. Gigon contributes a third study of the laws of sugar excretion in diabetes mellitus. This is a careful metabolism study of a case of diabetes, during the course of which the ducts of the pancreas became obstructed with calculi. This case, in which no pancreatic secretion reached the intestinal tract, showed less disturbance of absorption than was to be expected from a study of previous cases. This is possibly due to the fact that in other cases other conditions than pancreatic obstruction worked in conjunction with the pancreatic obstruction to increase the disturbance of absorption. The excretion of fat in the intestinal tract in this case showed great variations from time to time. However, the amount of soap present was continually decreased in comparison with the normal, and the amount of fatty acids always exceeded the amount of soaps. Pankreon administered in this case produced only a transitory improvement in the condition.

4. Plesch describes a new apparatus for estimating the hemoglobin of the blood, for which he claims great accuracy combined with ease of application. The principle of the apparatus is the comparison side by side of rays of light which have passed through a standard solution and a solution of the blood to be tested respectively. The standard solution is carbon monoxide hemoglobin and carbon monoxide is passed through the blood to be tested. Each is diluted 250 times, as the most accurate comparisons can be made of paler colors. The depth of the layer of solution to be tested is varied until it gives the same shade of color as the test solution, and the per cent of hemoglobin is calculated from the thickness of layer

necessary to give this. The rays of light passing through each solution are brought side by side by an ingenious arrangement of prisms. With the instrument the total blood mass of the circulating blood can also be calculated by comparing the oxygen-absorbing power of the hemoglobin before and after the inspiration of a measured quantity of carbon monoxide. [The apparatus seems applicable to more exact investigations rather than to routine clinical use.]

5. In a study published in 1904 Arneth subdivided the neutrophilic leucocytes into five classes according to the irregularity of their nuclei. In class I he placed the neutrophiles with round or only slightly indented nuclei, and in class V those with nuclei showing five chromatin masses as the extremes of his classification. He showed that in infectious diseases as compared with the normal there was an increase in the percentage of leucocytes of the simpler forms. In the present study Bourmoff and Brugsch have confirmed these findings for a number of severe infections like tuberculosis, scarlet fever, pneumonia, erysipelas and tetanus. They find that the degree of change does not always run parallel with the severity of the disease. These authors, however, do not agree with Arneth that the change represents an actual change in the leucocytes of the circulation, but they think it is rather a result of the fixation process dependent on the fact that in these diseases the nuclei are larger and plumper, and consequently not as prone to shrinkage during fixation and staining as under normal conditions. The change then to them is an index of chemico-physical changes of the medium in which the leucocytes circulate. However, further biologic studies of these factors are promised with the hope of attaining a better knowledge of the blood changes in infectious diseases.

6. Kuhn reports here a case of carcinoma (recurrent inoperable cancer of the breast) treated by injections of pancreatin into the tumor masses. The result of this was very extensive destruction, not only of tumor but of surrounding tissue, with a rather speedy fatal end. This case does not speak strongly in favor of the efficacy of pancreatin treatment. In the discussion, Kuhn speaks of favorable results which have been obtained in Leyden's clinic by the use of pancreatin given by mouth in cases of cancer of the stomach. Here a decrease in the pyloric obstruction was obtained, and though the cases are too few in number for very general conclusions, it would seem that pancreatin given thus in one to three teaspoonful doses might be of some value. In another case of cancer with cutaneous nodules the application of radium appeared to have some destructive action on the cancer cells, but this was not very marked.

7. In 27 cases of typhoid Meyer obtained the typhoid bacillus from the circulating blood in 26 cases. Of particular interest in this series are 2 cases, one complicated by pneumonia, in which the pneumococcus and typhoid bacillus were obtained from the blood culture, the other a case of typhoid following child-birth in which both the streptococcus and typhoid bacillus were obtained. In a case resembling typhoid clinically in every respect a pure culture of bacillus alcaligenes fecalis was obtained from the circulating blood. Tests of the typhoid organisms obtained from these cases showed greater pathogenicity for animals when derived from cases of severe typhoid as compared with those from mild cases.

8. In a study of diabetes mellitus Geelmuyden obtained maltose from the urine in a number of his cases. He considers maltosuria not a rare, but a common, accompaniment of glycosuria in diabetes, which is contrary to most of the findings of other authors. [H. A. C.]

Correspondence.

WARM AIR FOR INFLATION OF THE EAR.

BOSTON, Oct. 16, 1907.

Mr. Editor: This letter is written to advocate the use of warm air for the inflation of the ear, instead of air the temperature of the room. In secretive middle ear conditions it is especially valuable. The sensation of warm air is agreeable. Air warmed over a gas burner is injurious to an ear.

I have an air chamber, that fits on a bull's-eye electric nose and throat light, perforated at the side to receive the tip of the Politzer bag. The temperature can be tested on the face.

I have in view a more practical and scientific method of using warm air. I realize that it is not an original thought, but certainly it is not generally employed and its advantage is considerable.

Respectfully yours,

ARTHUR J. SHAW, M.D.

LETTER FROM PARIS.

[*From our Special Correspondent.*]

ON THE ABORTIFACIENTS OF SYPHILIS: ATOXYL AND CALOMEL.

PARIS, Oct. 8, 1907.

Mr. Editor: There are glad tidings in the air for the festive bummer, the knight-errant with the *insouciant* device, "Any port in a storm," with whose untiring efforts to relieve the tedium of life we are so often called on to sympathize, and from whom we try to drive off the Neisser, Unna and Schaudinn moths when they settle on him in the course of his convivial endeavors.

For the paternal Metchnikoff, to whom already he owes a statue for the gift of a divine and preservative balsam to be applied during his leisure hours of repentance, has now laid him under an even heavier debt of gratitude.

But first let me give the latest and improved formula of the first-mentioned sinner's *vade mecum*. It appears that the original 25% to 33% calomel in lanoline salve would not slip, "lacked unctuosity," to use the official term, so great was the proportion of its solid contents. Consequently a different formula has to be devised, and the following, which has now been adapted, is said to fit all requirements: Calomel, 33; lanoline, 67; vaseline, 10. This, we are told, can give points in slipperiness even to the uncertain banana-skin; and we now have really no longer any excuse for allowing the pallid treponema to get the upper hand of us.

But even this revised edition of the original salve is not perfect, perfection being not of this earth. It is, of course, a comfort to be assured that the ointment now slips all right; but the method itself leaves much to be desired in a number of respects. It is all very well to inoculate a macacus ape, rub in the pomatum, and demonstrate that the virus does not develop; *you know where to rub!* But how is the ordinary confiding mortal, "the man in the street," to know where to rub? Or is he to inunct the entire genital region? And in that case would not such a generous application risk producing skin inflammation, or mercurial intoxication?

Furthermore, to have a fair chance of proving efficacious the inunction has to be made *during the first few hours* after the infectious contact, under penalty of arriving too late and of finding that the elusive spirochetæ have already moved on.

Again, the lapsers from the paths of virtue are not all of the male sex, evidently: there are the co-respondents, to use the legal phrase; and whereas it may occasionally be feasible for a man to single out a point of entrance for the virus in some slight excoriation, this becomes practically an impossibility in the other sex.

Consequently, it is clear that there are several important drawbacks to the calomel salve preservative, and they have naturally not escaped the acumen of MM. Metchnikoff, Roux and Salmon, of the Pasteur Institute, who now hope that a more satisfactory method has been discovered in the hypodermic use of atoxyl, or anilarsinate of soda, a combination of aniline and arsenic, the latter being the predominating ingredient. But this point requires some development.

When it was found that atoxyl was efficacious against the trypanosoma of sleeping sickness, the idea immediately arose of testing the action of this remedy in syphilis, on account of the close similarity between the spirilla of the

two diseases; and about three months ago Hallopeau, of the Paris Faculty, made a report to the Academy of Medicine of this city, on the generally favorable results of this treatment in upwards of 150 cases of syphilis. Since this is probably somewhat of a novelty, and you may not yet be familiar with the method, I will give a rapid summary of his *modus faciendi*, and of the principal details of this treatment.

He always uses a 10% solution in hypodermic injections in the gluteal regions. With a patient of average size and health, he gives first, at an interval of two days, two injections of 0.75 cg. each of atoxyl; then, at intervals of three days, four injections of 0.50 cg. each. This constitutes a series, and must be followed by a rest. Thus:

First day,	hypodermic injection	0.75	cg.	of atoxyl
Third day,	"	" 0.75	"	"
Sixth day,	"	" 0.50	"	"
Ninth day,	"	" 0.50	"	"
Twelfth day,	"	" 0.50	"	"
Fifteenth day,	"	" 0.50	"	"

The drug is eliminated by the urine, in which as a general thing no trace of it can be found two weeks after the completion of such a series. Treatment proceeds, consequently, by series of six injections, taking two weeks, separated by intervals of two weeks' rest.

From a pharmacological point of view, now, there are several important details, to which the closest attention is invited. The drug deteriorates spontaneously at the end of a short period; in two weeks it breaks down, and may form products of greater toxicity. It must consequently only be used when freshly prepared, as it will not keep. The same thing occurs if the drug is heated to 100° C. for a while; it cannot therefore be sterilized in the usual manner. Hallopeau has used two varieties of atoxyl, one of German origin, the other of French; the German appears to be much more toxic than the French, though this may depend simply on the mode of preparation, and also on the fact that the German product can scarcely be procured fresh whenever wanted.

Clinically one feature must never be lost sight of: contrary to what might be supposed from the name, atoxyl is a poison, and it belongs to the group of *cumulative* remedies; trouble from its use is then bound to follow with everybody, if its dose is too great, or if it is given for more than a certain length of time. For these reasons the series must be short, and interrupted by periods of rest to allow for elimination. During the series a patient must be closely watched, and the treatment interrupted at the least sign of intolerance, — returning again later on, if nothing occurs.

The signs of intolerance of atoxyl are: gastro-intestinal pain, nausea or vomiting, general distress, disagreeable sensations in the limbs, dysuria, loss of consciousness and algidity. They are usually slight, and pass off when the remedy is stopped; but in some few cases may be very severe, and cause anxiety for forty-eight hours or more. Great care must be taken to be on the lookout to catch the first symptoms of intolerance, as they appear with the greatest suddenness, as though some rapid dissociation of the drug took place after it had accumulated in the system to a certain point.

On account of the severity and great suddenness of appearance of atoxyl intolerance, it is necessary to proceed with caution, give moderate doses, at proper intervals, and by series. In determining the proper dose, the age, size and weight of the patients must be considered, as well as their general condition of health. If there is heart or kidney disorder, or a cachectic condition, great circumspection in dose must be observed.

Atoxyl forms a third weapon in our hands against syphilis, not one designed to dethrone the other two, but one to be used concurrently with or in succession to its seniors. There is no more incompatibility between atoxyl and mercury than between mercury and iodide of potash.

So much for atoxyl as a *curative* remedy in syphilis; now for its qualities as a *preventive*, — the point that interests us more directly to-day, and which, if it turns out to be true, seems destined to revolutionize matters.

Experimenting on the macacus ape with injections of atoxyl, Metchnikoff has found that when given hypodermically *after* the appearance of a chancre at the point of syphilitic inoculation, it does not prevent the evolution of the disease; *but that, when used earlier, before the chancre has appeared, during the incubation interval, even so long as two weeks after inoculation, — no visible signs of syphilis manifest themselves!* This is the really interesting point in this whole affair.

The apparent reason why atoxyl has time to act, during the long incubation period, is that the treponema does not adapt itself readily to the human system, and that a certain length of time is necessary for it to be able to multiply to any appreciable extent.

Being myself a little hazy about the exact personality of the macacus, I consulted Webster, who says: "The macacus is a genus of apes characterized by having short tails and very prominent eyebrows." It at once becomes clear why Metchnikoff has used this special animal for his experiments, as its relation to man must be very close: we could most of us at a pinch put our hands on fellow-beings who are, in our opinion, apes with short tails and very pronounced eyebrows! Still, in spite of this close analogy, and of the apparent success of the method among our brethren, the pithakoi, the remedy has not as yet won its spurs as an abortive of syphilis in man, so far as I know. But certainly no great interval will elapse before any practitioner so desirous can find an opportunity of testing it for himself.

Think of the comfort it is going to be, to both physician and patient, to have this plank of salvation to tender to these men when they turn up a few days after exposure, half crazed with suspense and threatening suicide through anxiety! What a mercy it will prove if only to keep them quiet, to be able to say that even if they have caught syphilis we have now a means of heading it off before it comes to maturity.

There can be little question as to the practical importance of this discovery. In spite of the meritorious efforts of the many well-intentioned people who are striving to open the eyes of the young to the dangers of irregular life, and to stem the tide of the social evil, I question whether their results will amount to much. At most will they frighten a few timid neurasthenics away from the Scylla of vice into the Charybdis of self-abuse. For they have here to deal with the greatest factor in life: the whole world revolves about the sexual pivot, and there is no use of shutting the eyes to this fact; what then can their feeble voices really hope to accomplish in face of a problem of such magnitude as this?

So long as human nature remains as it is, and we continue to be no more than the descendants of father Adam, so long will such men as Metchnikoff be necessary for the public weal. The ingenuity of man will continue to extract different kinds of alcohol from the fruits of the earth, each race according to its climate; and frequentation of the society of Bacchus leads inevitably to a search after other members of the ancient theogony, — Mars, and Venus in particular, — with the results that always have followed, do follow and will continue to follow, *in saecula, saeculorum*, — the lock-up, hospital, and physician's office! This is why, at least till further notice, we cannot be provided with too many remedies of the order of Hydrarg., KI, atoxyl and calomel.

In fact, so far from improving, the world's morality seems likely to grow worse, on account of the steadily increasing difficulty of marriage among civilized people. Life is now not easy; to most men the expense of maintaining a family grows apace, and marriages occur at a point in life that is steadily receding. It would seem, then, that illicit intercourse between the sexes can do nothing but increase progressively.

To what a degree this can be carried in civilized countries can be realized by a glance at the state of affairs reported a while ago in the city of Toulouse, where, during a given period, out of a total of 194 births, 41 were legitimate, and 153 illegitimate! We in Paris thought we were doing pretty well with an illegitimate proportion of between 25% and 30%; but that is a mere circumstance when placed beside Toulouse's record *of over 75%!*

"Spectator."

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCT. 12, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York			Quincy	6	3
Chicago			Waltham	8	3
Philadelphia	—	—	Pittsfield	11	0
St. Louis	—	—	Gloucester	6	3
Baltimore			Brookline	7	2
Cleveland	—	—	North Adams	9	1
Buffalo	—	—	Chicopee	9	7
Pittsburg	—	—	Northampton	13	2
Cincinnati	—	—	Medford	6	1
Milwaukee	—	—	Beverly	4	1
Washington	—	—	Leominster	4	—
Providence	83	19	Hyde Park	5	2
Boston	212	79	Melrose	4	1
Worcester	40	12	Newburyport	—	—
Fall River	49	33	Woburn	4	0
Cambridge	27	9	Marlboro	3	1
Lowell	43	16	Westfield	4	1
Lynn	18	2	Peabody	—	—
New Bedford	30	13	Revere	—	—
Springfield	23	3	Attleboro	4	1
Lawrence	27	9	Clinton	3	1
Somerville	20	5	Adams	5	3
Holyoke	10	5	Gardner	2	1
Brockton	14	5	Milford	—	—
Malden	13	4	Watertown	4	0
Chelsea	9	5	Plymouth	—	—
Salem	8	3	Weymouth	4	1
Newton	7	2	Framingham	5	1
Haverhill	7	2	Southbridge	5	4
Fitchburg	5	2	Wakefield	—	—
Everett	11	6	Webster	—	—
Taunton	17	4			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED OCT. 9, 1907.

STONER, G. W., surgeon. Directed to proceed to Montreal, Quebec, and eastern Canadian stations for special temporary duty. Oct. 4, 1907.

WILLIAMS, L. L., surgeon. Detailed to represent the Service at the Sixteenth Annual Meeting of the Association of Military Surgeons, Norfolk, Va., Oct. 15–18, 1907. Oct. 3, 1907.

STONER, J. B., surgeon. Granted leave of absence for one month from Oct. 14, 1907. Oct. 4, 1907.

WERTENBAKER, C. P., surgeon. Detailed to represent the Service at the Sixteenth Annual Meeting of the Association of Military Surgeons, Norfolk, Va., Oct. 15–18, 1907. Oct. 3, 1907.

SPRAGUE, E. K., passed assistant surgeon. Granted leave of absence for five days from Oct. 15, 1907. Oct. 9, 1907.

MCMULLEN, JOHN, passed assistant surgeon. Granted leave of absence for three days from Aug. 17, 1907, under paragraph 191, service regulations.

GRUBBS, S. B., passed assistant surgeon. Granted leave of absence for five days from Oct. 5, 1907. Oct. 4, 1907.

GRUBBS, S. B., passed assistant surgeon. Granted extension of leave of absence for three days from Oct. 10, 1907. Oct. 7, 1907.

PARKER, H. B., passed assistant surgeon. Granted leave of absence for three days from Aug. 11, 1907, under paragraph 191, Service regulations.

LLOYD, B. J., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Lloyd for twenty-one days from Aug. 5, 1907, revoked, and leave of absence granted for one month from Aug. 14, 1907. Oct. 7, 1907.

WARD, W. K., passed assistant surgeon. Granted leave of absence for one day, Aug. 17, 1907, under paragraph 191, Service regulations.

FOSTER, A. D., assistant surgeon. Directed to report to Chief Medical Officer, Ellis Island, N. Y., for duty. Oct. 4, 1907.

COLLINS, G. L., assistant surgeon. Granted leave of absence for one day. Oct. 5, 1907.

HALLET, E. B., acting assistant surgeon. Granted leave of absence for three days from Oct. 10, 1907. Oct. 9, 1907.

KENNARD, K. S., acting assistant surgeon. Granted leave of absence for one day, Aug. 30, 1907, under paragraph 210, Service regulations.

NAULTY, C. W., Jr., acting assistant surgeon. Granted leave of absence for two days from Oct. 15, 1907. Oct. 4, 1907.

RAY, D. G., acting assistant surgeon. Granted leave of absence for seven days from Oct. 4, 1907, under paragraph 210, Service regulations.

RAY, D. G., acting assistant surgeon. Granted leave of absence for four days from Oct. 11, 1907. Oct. 8, 1907.

WETMORE, W. O., acting assistant surgeon. Granted leave of absence for one day in August, 1907, under paragraph 210, Service regulations.

BOARD CONVENED.

A board of medical officers was convened to meet at Baltimore, Md., Oct. 10, 1907, for the physical examination of a cadet in the Revenue-Cutter Service. Detail for the Board: Surgeon L. L. Williams, Chairman, and Passed Assistant Surgeon J. T. Burkhalter, Recorder. Oct. 9, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING OCT. 12, 1907.

H. L. DOLLARD, assistant surgeon. Detached from the Naval Hospital, Newport, R. I., Oct. 15, and ordered to the "Rhode Island."

H. F. HULL, assistant surgeon. Ordered to the Naval Hospital, Newport, R. I., Oct. 15.

B. F. JENNESS, passed assistant surgeon. Detached from the "Constellation" and ordered to the "Glacier."

R. E. LEDBETTER, passed assistant surgeon. Detached from the "Glacier" and ordered home to wait orders.

H. D. WILSON, surgeon. Detached from the "Dixie," when placed out of commission, and ordered home to wait orders.

SOCIETY NOTICES.

THE BOSTON SOCIETY OF EXAMINING PHYSICIANS AND SURGEONS. — The next meeting of the Boston Society of Examining Physicians and Surgeons will be held at the Parker House, on the evening of Oct. 30, 1907. A dinner will be served at 7 o'clock. The business meeting will be called to order at 8.30. In view of recent criticisms of medical experts based upon cases outside of this Commonwealth, the society will take for discussion "The Medical Witness in the Courts of Massachusetts," and the following have been invited to attend and to participate in an informal discussion of this subject: Melvin O. Adams, Esq., Herbert Parker, Esq., Thomas W. Proctor, Esq., Samuel M. Child, Esq., E. P. Saltonstall, Esq., Henry F. Hurlburt, Esq., Hon. John A. Sullivan, Wm. B. Sprout, Esq., J. Porter Crosby, Esq., James P. Magenis, Esq.

CHAS. THEO. CUTTING, M.D.,
Secretary.

THE NORFOLK DISTRICT MEDICAL SOCIETY. — A stated meeting will be held at Masonic Temple, 171 Warren Street, Roxbury, on Tuesday evening, Oct. 29, 1907, at 8 o'clock. Communications: "The Law and the Doctor," Edward G. Morse, M.D.; "Lawyers, Doctors and the Courts," Arthur D. Hill, Esq., and Charles F. Jenney, Esq. The discussion will be opened by Dr. George W. Gay, President of the Massachusetts Medical Society. Collation.

The Board of Censors will meet for the examination of candidates for admission to the Massachusetts Medical Society on Thursday, Nov. 14, at 2 P.M., at the Norfolk House. Fellows will please send to the secretary the names of persons who wish to join the society.

WILLIAM H. ROBEY, JR., M.D.,
Secretary.

RECENT DEATH.

DR. THOMAS A. YORK, of Brooklyn, N. Y., died on Oct. 17, at the age of thirty-eight years. He was graduated from the Long Island College Hospital in 1901, and was for some years in the service of the Health Department in Brooklyn.

BOOKS AND PAMPHLETS RECEIVED.

The Development of the Human Body. A Manual of Human Embryology. By J. Playfair McMurrich, A.M., Ph.D. Third edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Gout, Its Pathology, Forms, Diagnosis and Treatment. By Arthur P. Luff, M.D., B.Sc., F.R.C.P. (Lond.). Third edition, New York: William Wood & Co. 1907.

Bilharziosis. By Frank Cole Madden, M.D. (Melb.), F.R.C.S. (Eng.). Illustrated. New York: William Wood & Co. 1907.

Immune Sera. A Concise Exposition of Our Present Knowledge Concerning the Constitution and Mode of Action of Antitoxins, Agglutinins, Hæmolysins, Bacteriolysins, Precipitins, Cytotoxins, and Opsonins. By [illegible] Sherrick Boldman. Second edition, rewritten. Illustrated. New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1907.

NOV 4 1907

Original Articles.

THE SUPERIORITY OF PRIMARY OVER SECONDARY CESARIAN SECTIONS, AND THE FEASIBILITY AND ADVANTAGES OF A PREDETERMINATION OF THE METHOD OF DELIVERY.

BY EDWARD REYNOLDS, M.D., BOSTON.

WHEN the forceps were first invented it was regarded as an instrument of last resource, and even the simplest forceps operations were considered exceedingly dangerous. Its use has been gradually extended until it is to-day employed to forestall exhaustion, and in its lesser applications, at least, for the mere lessening of suffering. We are living through a somewhat different but in some respects similar development of the Cesarian section. Its ancient use was for the preservation of the child after the death of the mother. Its revival after the introduction of asepsis was with the idea of lessening the fetal death-rate with but little added risk to the mother. It has now come to be regarded as furnishing in certain difficult cases the safest method of delivery for both mother and child. An inquiry into the circumstances under which it is least dangerous seems appropriate to the spirit of the times.

Each man must be guided in the end by the results of his own experience and the experience of those whom he personally knows and trusts. That in my own experience I have escaped without mortality is, I think, due to the fact that the majority of my operations were done before labor, and that only three could by any stretch of classification be considered late; but I was early struck by the, to me, undoubted fact that both the discomforts which my patients went through during convalescence and my own anxieties therefrom were closely proportional to the length of labor which they had endured before operation. My series (29, now 30, cases without mortality) is, however, too short to carry conviction upon this point to others by a mere recital of the cases. The statistical method of inquiry into the results of others whose personalities are not directly known to us, and of whose cases we have not had personal cognizance, is capable of great abuse and is often misleading, yet it cannot be entirely discarded. It is misleading when conducted upon a series so small that the element of chance is not eliminated, and when used to elucidate points of such delicacy as to lie within the very wide limits of error with which it is necessarily afflicted. It is moderately trustworthy when based upon large numbers of cases, confined to broad lines of inquiry, and attested by sweeping differences in results.

The value of any statistical inquiry must, moreover, rest so entirely upon the spirit and methods under which it was conducted that it is proper that any statistical argument should be prefaced by a statement of the method employed in preparing it. The table which I propose as a prelude to my own observations upon this subject was prepared after the following method: A library assistant, who was uninformed of the points involved, was requested to collect from the literature of the world all the papers which contained case reports of Sænger Cesarian sections done within the last ten years by operators who had had at least five cases. These original reports were then submitted to me. From them were eliminated all cases in which the section had been performed for placenta previa, eclampsia, carcinoma or other new growths, or complicated by other operations having a mortality of their own, such cases being plainly inapplicable to an inquiry into the mortality of the Cesarian section when used for mechanical obstruction and as an alternative to the intrapelvic operations. Cases involving operations upon the tubes or ovaries for the prevention of subsequent fertility were not excluded, these being regarded as at times an intrinsic part of the performance of the Cesarian section.

The cases so selected were then divided for the purpose of this inquiry into three classes: 1. Primary sections, those performed before the beginning of labor, or with the advent of the first pains. 2. Secondary sections, those performed after a certain amount of labor had demonstrated its probably unsatisfactory character, but before exhaustion had set in, and before it had become definitely established that the natural powers would fail to effect the passage of the brim. 3. Late sections, those performed after definite arrest of the head at the brim.

It is at once evident that while the line between primary and secondary sections, so defined, is a perfectly clear one, that between the secondary and late sections is, under the definition, indefinite; and especially so in cases reported in the abstract by others. In separating the cases into their respective classes, I therefore assigned to the secondary section only those cases in which it was definitely stated that the operation was done during the first stage of labor, or that the os was of less size than a fifty-cent piece, putting into the class of late sections all doubtful cases, all cases in which the os was more widely dilated, all cases in which labor had endured for twenty-four hours, or in which it was stated that strong pains had been present for more than eight. Thus many comparatively favorable cases were without doubt unfairly assigned to the unfavorable late class, by which the mortality of this class of late sections is undoubtedly represented as less than it in fact should be, and also the secondary sections are restricted to include only the most favorable of all the operations done during labor; but I hope that you will feel that the final argument is strengthened by this discrimination against the results which my personal experience had led me to expect. I was further careful to assign every case to its final position before ascertaining its result for mother or child.

There were left for analysis 289 cases by 20 different operators. Of these 82 were operated upon before labor began, 158 early in labor, and 49 after the failure of the natural powers was

established. The 82 cases done before labor yielded one death, a mortality of 1.2%. The 158 cases done early in labor showed 6 deaths, a mortality of 3.8%. The 49 cases done after the arrest of the head, or after an unduly long first stage, showed 6 deaths, a mortality of 12%.

Considered in the most superficial way this very marked variation in mortalities is just what should have been expected *a priori*, *i. e.*, it shows that when the section is performed for purely mechanical indications, its mortality is proportionate to the amount of labor which has been endured before operation.

The Cesarian section before or during labor seems not inaptly comparable to an operation for appendicitis in the interval or during the attack. It is, perhaps, more strictly comparable to the performance of a simple abdominal operation upon individuals selected at different points during the progress of a Marathon run or previous to the start. Would any one doubt that if a number of candidates for a Marathon run were divided into classes and subjected to a simple abdominal operation, say the removal of a normal appendix, some before the start, some after the finish, and some at differing periods of the race, that the mortality would be higher among those who were operated upon in an exhausted condition at the finish than among those who underwent the same performance before making the start? The mortality in this case, as in the sections during labor, would probably be roughly proportionate to the amount of exhaustion which the individuals had undergone. But it is not safe to reason from analogy nor upon *a priori* grounds. It is better to adhere to facts, and an inquiry into the causes of death in these 289 women subjected to the Cesarian section at different periods of labor is exceedingly interesting.

The only death among the 82 primary operations was due to an accidental failure of technic in combination with the in competence of an assistant. This death occurred in a case operated upon nearly ten years ago, in which the uterus was sutured with catgut, which has since been generally admitted to be an improper material for use in the uterine suture of the Cesarian section, on account of its liability to become untied during the alternate relaxations and contractions of the uterus. The patient collapsed a few hours after labor, at a time when the operator was at a distance in attendance upon another case; an assistant saw her, and pronounced it a mere nervous faintness needing no treatment. She died shortly afterward and at the autopsy the uterine sutures were found untied and the abdomen full of blood. The operator himself calls it an unnecessary death due to a mistake in technic and the incompetence of an assistant. This death would hardly occur to-day, but for the sake of fairness must be left to stand as the only mortality among this long list of primary cases. It is to be noted that there was no case of peritonitis. This mortality is not only in quantity but in etiology also in strong contrast to that of the cases operated on during labor.

Although the 158 secondary cases (those done early in labor) were operated on by the same operators and under the same conditions, their mortality was wholly due to infection, — all six fatal cases died of peritonitis; and among the 49 late cases, under the same conditions, 3 of the six deaths were reported as due to peritonitis, 2 were reported under the word "infection," and one as due to thrombosis and embolism during convalescence. Only one of these fatal cases had been examined before it came under the care of the operator. In the others the occurrence of infection may be explained variously, *i. e.*, as due to contamination during labor (although in many of them the membranes were unruptured), as due to a lowered resistance from exhaustion, or as the results of a peculiar susceptibility of the peritoneum after long labor. I do not think that in the present condition of our knowledge we can discuss this question with any degree of scientific certainty, or from any standpoint other than the beliefs of the individual disputant. The facts remain that the only death in the cases operated upon before labor was from an accidental and preventable cause; that the cases operated upon during labor by the same operators showed a mortality which was due throughout to infection and which rose steadily in percentage in proportion to the length of labor endured before operation.

Are the following three conclusions then unfair, even when we remember all the uncertainties of the statistical method?

First: It is clear that the mortality of the primary section is less than that of the section performed during labor.

Second: It seems also clear that the section performed early in labor is safer than that undertaken after the failure of the natural powers.

Third: It is desirable that cases which are to be subjected to the Cesarian section should be selected as such in advance of labor, whenever the conditions make this possible.

It is a severe arraignment of the obstetrics of the last few years that it has so generally failed to appreciate the desirability of making the decision for or against the Cesarian section in advance of labor, and that its literature shows an absence of any sustained effort to make this decision generally possible. Progress has been made, cases with clear indications are now generally operated on in advance of labor, and the doubtful class which is still commonly submitted to the so-called test in labor is becoming smaller, but it is to be hoped that this unsatisfactory and always dangerous test will, in the end, be entirely superseded and laid aside. This would be accomplished at once if the profession generally believed that it is possible to predict the result of labor in advance with sufficient accuracy to warrant action. Some few obstetricians are already convinced that the amount which can be accomplished in this direction is much greater than has been generally supposed, and that our power in this direction is already sufficiently great to be of practical use in certain classes of cases.

Success in predicting the result of natural labor to be expected in a given case is dependent upon a capacity for estimating in advance each of the three great mechanical factors in labor, *i.e.*, the obstacle offered by the pelvis, the amount of the maternal muscular powers, and the characteristics of the head. Each of these must be estimated separately, however, and the result obtained by a comprehensive judgment based upon all three.

The amount of the pelvic obstacle is too often spoken of as though it were a mere matter of size obtainable by measurement; in reality the amount of the pelvic obstacle is much more a question of its shape, or rather of the influence of its shape upon any diminution of its size. Some abnormal variations in the shape of the pelvis offer rather less mechanical obstacles than are afforded by normally shaped pelves of the same size or conjugate; other variations create obstacles much greater than those of a normal pelvis of the same size. We are, in fact, too apt to speak of the "contracted pelvis," as though it were merely diminished in its diameters, when we should speak of the "deformed pelvis" which alters the mechanism of labor, and so makes any diminution of its diameters a matter of greater importance. It is necessarily beyond the scope of this paper to enter into any extended discussion of the subject of deformities of the pelvis, but the main points which I wish to make,— that the estimation of the amount of obstacle to be expected from a given pelvis is quite as dependent upon a knowledge of its shape as upon its mere size; and of the extent to which a diagnosis of its shape depends upon an extended examination of the patient rather than upon mere measurements, — may be illustrated sufficiently well by using two of the more common forms of difficult pelvis as examples.

Among the most common of all the difficult pelves is that known as the cylindrical or justo-minor type. From a mechanical point of view the leading characteristic of this pelvis is that it is long in proportion to its size and that it is rather straight and longitudinally erect, *i.e.*, the inclination of the brim to the horizon is usually less than normal, the symphysis is erect, and the sacrum is straight and erect.

The longitudinal curve of the sacrum is less than normal, the promontory is high and the ilia are also very erect, the false pelvis flaring less than normal. The transverse lines of the pelvis are highly curved. The inlet is very round and the iliac crests are highly curved, the difference in length between the interspinal and intercristal diameters being marked. A line connecting the anterior superior spines is higher above the pubes than in the normal pelvis.

With these peculiarities is correlated of mechanical necessity a lessening of the antero-posterior curves of the whole spine. The lumbar region is flat, and the relations between the acetabula and the promontory are such that the body weight is borne along a line which forms a less angle with the upper part of the pelvic axis than in the normal pelvis. The hips of such a woman are usually high and, unless disguised by fat on the outer aspect of the pelvis and thighs, are apt to have a narrow appearance. The legs are straight, and both pelvis and skeleton as a whole are more truly neutral or infantile than either feminine or masculine in type. Although no positive rule exists, such women are apt to begin menstruation late, and to have small uteri with long pointed cervices. The high degree of obstacle afforded by this pelvis in proportion to its size is due to the fact that the obstacle continues throughout almost the whole of the bony canal, the relative shallowness of the longitudinal curves making the middle portion of the pelvis but little more roomy than the superior and inferior straits. If the Cesarian section has been ruled out, this form of pelvis is better adapted to forceps or craniotomy than to any other operation. Version is but seldom successful in justo-minor pelves after forceps have failed, and in this form of pelvis pubiotomy and symphyseotomy are especially apt to be followed by extensive lacerations of the soft parts, owing to the fact that the head meets with resistance throughout almost the whole length of the pelvis.

A hint as to the existence of this pelvis is afforded by the history of late sexual development and by the evidences of it observable in the body as a whole. These are, however, not infallible guides. If an examination of the figure standing, and with the corsets removed, demonstrates the presence of a straight spine and sacrum, with an ill-marked intergluteal fold and comparatively horizontal, sharply curved iliac crests, with the anterior spines high above the symphysis, — all this is strongly corroborative evidence. If this is confirmed by the relation between the interspinal and intercristal diameters as obtained by measurement, and by the shallowness of the longitudinal, and exaggeration of the horizontal, curves, as obtained by internal palpation of the sacrum and lateral walls of the pelvis by the fingers within the vagina, the diagnosis of this form of pelvis may be considered established. We have then to estimate from the results of all these examinations the degree of its alteration in the direction of this deformity, in order to estimate the amount of difficulty which is to be expected in labor from its size as estimated from the length of the conjugate taken by measurement.

Another much neglected but very common and highly important pelvis, which has, so far as I know, received no generally accepted distinctive name, is that of which the leading mechanical characteristic is its excessively curved axis. This pelvis is in many respects the opposite of the justo-minor pelvis. The inclination of its brim to the horizon is excessive, the direction of the symphysis approaches the horizontal, the sacrum is very highly curved and the excavation is roomy, the false pelvis is broad with a wide transverse flare, the acetabula are almost directly under the body weight or may be behind it, and the line of pressure of the body weight is consequently almost directly across the axis of the inlet. The inlet is of normal shape, but flat rather than

round. The whole spine is of mechanical necessity marked by very highly developed curves, the lumbar curve and the longitudinal curve of the sacrum being especially marked. The hips are wide in appearance, the legs are knock-kneed and often somewhat bandy-legged. The figure as a whole is markedly, if not excessively, of the feminine type, and these women usually have an active sexual life.

This pelvis tends intrinsically to be roomy and is then not of operative importance, but the great inclination of its brim makes a difficulty in labor even with normal diameters, and a very serious obstacle whenever its size is even slightly diminished.[1] When a pelvis of this shape is small in comparison with the head, natural labor usually fails and the intrapelvic methods of artificial extraction have an exceedingly high fetal mortality. The use of forceps high is made difficult, and frequently ineffective, by the posterior position and the excessively backward traction which is necessary to extraction, and though version is a highly effective operation it is apt to result in stillbirth from the excessive strains upon the body and neck as the child is drawn around the nearly horizontal symphysis and through the highly curved pelvis.

In this pelvis the field for the intrapelvic operations is an exceedingly narrow one, and it should as a rule be subjected either to natural labor or the Cesarian section in accordance with its size. Its recognition in advance of labor and the estimation of its obstacle in connection with the amount of the other factors in labor is therefore of especial importance.

The probable existence of this pelvis may be suggested by the excessive antero-posterior curves of the woman's figure as she stands clothed, but a determination of the degree of alteration which is present necessitates a study of the spine in a standing posture after the corsets have been removed. The great curvature of the sacrum with the compensating excessive curvature of the lumbar spine, the deep intergluteal fold and the excessive inclination of the brim are readily appreciated in this position, but the internal palpation of the pelvis also furnishes evidence of the utmost value; the points of especial importance in determining the degree of alteration present being the length and direction of the inner wall of the symphysis, the angle between the superior and inferior straits, and the excess of curvature in the lumbo-sacral region.[2]

The obstacle likely to be afforded by the pelvis is then estimated by comparison of these points with the size of the conjugate as determined by measurement.

It is to be remembered in all cases that we have only one generally applicable measurement which gives us any direct information as to the actual size of the true pelvis, *i. e.*, the conjugate at the brim as calculated from the direct measurement of the diagonal conjugate. The other commonly taken measurements all relate to the false pelvis, and[3] are valuable rather as affording diagnostic information of the character of the deformity present than from the hint which they give us as to size.

The all-important and fundamental point is that every alteration in the shape of the pelvis has so all-important a relation to the rest of the skeleton in the ordinary mechanical efforts of locomotion, that there can be no alteration of its shape without correlated peculiarities of the spine, legs and feet, and in all the varieties of deformed pelvis observation of the degree of these correlated changes furnishes evidence of exceeding importance as to the degree of pelvic alteration.

It follows from all this that we are only in a position to estimate the amount of obstacle offered by the pelvis when we can postulate that we have a pelvis of such a shape, modified in this direction to such a degree, and likely to present an obstacle of large, moderate or small amount, because with such a degree of alteration of shape it combines a conjugate of such a size. This whole matter of the importance of the type of deformity present and also of the importance of estimating the degree of such alteration present in each case has but recently begun to attract attention as a matter of practical urgency, and we as yet lack exact methods for its study. We cannot teach it, we cannot put it within the reach of the general profession until we have established a normal standard, until we have learned the limits of normal variation, and have acquired methods of measuring exactly the degree of variation from the normal in each of the corollated peculiarities. For this it is necessary, first, to establish the normal by the measurement of large numbers of normal women, and, second, to go through the slow process of comparing a generally accepted normal standard with accumulated experience in abnormal cases. This means detailed work by many men, and its completion may take years or even a medical generation; until then scientific exactness is impossible. It is, however, in the meantime well within the powers of any experienced obstetrician to add greatly to his power of estimating the obstacle offered by a given pelvis, by training himself in observation along these lines. Only after such an estimation of the pelvic obstacle are we in a position to estimate its relation to labor, in connection with the estimated amount of the maternal muscular and nervous power, and the size and degree of ossificaton of the individual head.

The long established but, as I believe, incorrect, belief that it is safe to defer decision until after the failure of the maternal powers in labor has prevented any concerted effort to determine the extent to which we can estimate these powers beforehand, except by study of the history of past labors in multiparæ; but of late years a more careful study of the conditions of pregnancy has convinced some of us that such predictions can be

[1] The head of necessity enters the highly inclined brim in a posterior position, and the direction of the expulsive forces drives it against the outer side of its curved course, that is, much of the force of labor is wasted in driving the head against the symphysis.

[2] In marked cases the inlet of the pelvis may look almost directly forward and the upper portion of the posterior sacral region may pursue a nearly horisontal direction.

[3] Except in the Robert and similar pelves.

made with sufficient certainty to enable us to distinguish at least the more pronounced cases of obstetrical strength or weakness, with practical certainty. Lack of space and the fact that I have in two recently written papers [4] devoted myself more especially to the study of this factor in labor prevents my entering upon this subject at full length here, but some summary of it is necessary to any consideration of the indications for the primary performance of the section.

No new departure in medicine is likely to command confidence unless it accords both with the known theory of the subject and with the results of practical experience. It is therefore necessary to examine any such proposition from both sides; when a procedure is found sound in both ways it seldom fails of acceptance. Belief in this possibility of a prediction of the probable character of labor with success, in marked instances at least, rests on the theorem that the strains imposed upon the organism by pregnancy and labor are inherently similar.

The strains of pregnancy have long been studied and are well known. The development of the child, *i. e.*, the addition of its metabolism to that of the mother, and the consequent injection of an increased amount of waste products into her circulation throughout imposes an increased strain upon her eliminative system. The existence of the fetal circulation and the consequent increased pressure in the maternal vessels put an added load upon the heart throughout pregnancy. The increase of size and weight during the latter part of pregnancy involves an increased labor for the muscular and respiratory systems in the performance of all the ordinary efforts of life. The existence of all these added loads involves an additional expenditure in the nervous system which governs each and all of them. These several increased loads act and re-act upon each other. Whenever one part of the system fails under the load of pregnancy it increases the strain imposed upon the others, *e. g.*, when the maternal eliminative system fails to dispose of all the products of increased metabolism, the resulting toxemia in itself decreases the efficiency of the muscular system, and through the heart muscle the efficiency of circulation, which latter of itself impairs anew the efficiency of the eliminative organs, and so creates a vicious circle. The enumeration of the many forms in which deficiency of the one system affects the others must be omitted here, but will be apparent to all upon a little thought.

The strains of labor are these: the intense muscular activity of labor throws into the maternal circulation a sudden and considerable increase in the waste products of metabolism, and consequently involves an increased strain upon the activities of the eliminative system. The great increase in pressure in the uterine and general abdominal circulation involved in each contraction imposes an additional strain upon the heart. The nervous system is called upon to withstand the strains incident both to the maintenance of powerful muscular contractions and to the endurance of physical pain. These added strains, moreover, as before, react each upon the other, *e. g.*, any failure of elimination creates under physiological law a toxemia which decreases the power of muscular endurance and lessens the co-ordination of nervous control which is essential to effective expulsive efforts, etc.

The strains of pregnancy and labor are thus evidently similar in kind, and exerted upon the same organs. The capacity to endure strains so much greater than those of ordinary life is always dependent upon the normal existence within the individual of reserve strength with which to meet the occasional exigencies of life. We must recognize the factor of safety in vital existence as definitely as in bridge building. When an athlete is about to enter upon severe and long continued muscular efforts his factor of safety is carefully increased by the process known as training, *i. e.*, the organs which are to be exposed to strain are carefully developed by a process of gradual increase of the daily load. Under normal circumstances this is what happens to the organs of the woman during pregnancy. If her margin of safety is such that her heart and her muscular, nervous and eliminative systems maintain or increase their efficiency under the gradually increasing load of pregnancy, she may usually be depended upon for strong, sthenic labor. If her natural margin of safety is so narrow that these vital activities fail under the load of pregnancy, it is, to use the vernacular, "dollars to doughnuts" that they will fail more markedly during the added but similar strains of labor. These are the women whose labors are lingering, whose uterine contractions are painful but ineffective.[5]

These theoretical arguments appear to me to be sound. Are they supported by the results of observation? To answer this question each of us must appeal to his own experience, and I can only quote my own. I have been interested in this question for more than fifteen years, during the first ten of which I had under observation a mass of clinical material amounting at the end to about twenty-five hundred cases a year, and during the last five a consultation practice, which, though of course much smaller, has been prolific in cases of this kind. About five years ago, *i. e.*, after a ten years' interest in this question, I formulated for myself the theorem that the character of labor can be predicted from the character of pregnancy, and submitted it to continued observation. I watched it for five years longer before committing myself to it, but have now become convinced that in well marked cases, it is a safe guide in practice. I know that some other observers have reached somewhat similar conclusions and believe that as this problem becomes subjected to still wider observation this leading principle is likely to be generally accepted as trustworthy.

After estimating as carefully as possible the

[4] Jour. Am. Med. Asso., vol. xlix, no. 16, p. 1329. Surg. Gyn. and Obst., March, 1907, p. 306.

[5] These are the women who furnish the greater part of the mortality of labor plus the Cesarian section, *i. e.*, of the secondary and late section.

nature and degree of the mechanical obstacle offered by the pelvis, and the probable character of labor as predicted by the course of pregnancy, we have left for estimation the third factor in the result of labor, the size and degree of ossification of the head, a factor for the determination of which we have, in primiparæ, no other guide than physical examination during the last few weeks of pregnancy. We have no mechanically exact method of determining the size or degree of ossification of the head, but by repeated palpation of the child as a whole during the last weeks of pregnancy, aided by combined internal and external palpation of the head, and by forcing it firmly into the inlet by external pressure, I think we can gain an idea of its size and adaptation which, when combined with a full knowledge of the pelvis and probable maternal powers, will enable us to divide even primiparæ clearly into three classes: *A*. Cases which will undoubtedly be most safely delivered by primary Cesarian section. *B*. Cases which may be reasonably expected to deliver themselves by natural labor, and in which if natural labor fails the ordinary intrapelvic operations are not likely to present unusual difficulties. *C*. A large class of cases in which the decision is still doubtful.

In multiparæ this preliminary classification will be of course greatly assisted by the history of previous labors. It is a matter of universal experience that the labors of any individual woman ordinarily bear a close resemblance to each other, though the first labor is usually longer and harder than those which succeed it. If an accurate history of previous labors is obtainable, its consideration in connection with close study of the three mechanical factors, as already outlined, will usually make the decision easy. It may certainly be laid down as a safe rule that when an intrapelvic operation necessitated by alteration of the pelvic shape and diameters, has been so difficult as to yield a stillborn child at the hands of an experienced accoucheur, subsequent intrapelvic deliveries in the same woman are sure to be highly dangerous to the child, and are likely to be less favorable to the mother than the primary Cesarian section with its exceedingly low mortality and absence of subsequent morbidity.

For the doubtful class, whether primiparous or multiparous, a further examination is necessary. Either with the first pains of labor or at an appointed date, as the judgment of the attendant may dictate, such women should be shaved and both the vagina and abdomen prepared as for any surgical operation. They should be etherized and placed upon the table with abundance of light and assistance. The mechanical conditions presented by the pelvis should be re-estimated and the head examined both by bimanual estimation of its size and by pressing it forcibly into the brim with all the advantages offered by anesthesia and the absence of any hesitation about provoking labor. This further examination should narrow the doubtful class to but few cases, and in those few, if the operator wishes, the hand may be passed into the vagina and the fingers passed within the os between the uterus and membranes, thus subjecting the head to a still better bimanual examination of its shape and size, and permitting their use in estimating more exactly the adaptation between the pelvis and head when the latter is pressed strongly into the brim by external pressure from above. Palpation of the head with two fingers actually within the os at a height which enables them to play freely over the greater part of its surface affords a fairly accurate estimate of its size, and the examination of its adaptation to the pelvis, under ether, and under these conditions, gives very much more definite information than can be obtained at any earlier period.[6]

The single objection to this last method of examination lies in the possible risk of infecting the uterus which is inherent in it, but in the hands of a man competent to open the peritoneum through the vagina and under the same conditions of asepsis and assistance under which he would perform a vaginal hysterectomy, this risk seems insignificant, and is justified by the importance of the question at stake.

When finally the results of either of these last examinations into the adaptation between the head and pelvis are considered with reference to the obstacle offered by such an adaptation under the mechanism of the degree of deformity present, and in connection with the estimated muscular and vital condition of the patient as derived from her behavior during pregnancy, there should be but few cases left which cannot be relegated either to the ordinary care of labor or to an immediate Cesarian section; but for the cases which are placed under the ordinary care of labor (including the intrapelvic operations), the choice should be considered as final and irrevocable, *i. e.*, after they have been subjected to a full trial of the natural forces in labor, they should be treated by determined high forceps or version rather than subjected to the very considerable mortality of a late Cesarian section.[7]

In the very few doubtful cases which may still be left after the final examinations I believe that the choice should be made in accordance with the patient's vital adaptability to labor. Strong women, well equipped for labor, may always take their chances with the intrapelvic operations even with considerable mechanical obstacles; but upon the other hand it must be remembered that the ill equipment for labor which is shown by failure to withstand the strains of pregnancy is peculiarly an ill equipment for *labor*. Such obstetrically ill-equipped subjects nevertheless withstand the ordinary surgical operations perfectly

[6] I have in the past in some doubtful cases applied forceps to the sides of the head and so drawn the head lightly into the brim by way of measuring its adaptation, and if tractions are carefully abstained from I believe this to be a justifiable process, but it is easily overdone. I have not found occasion to employ it for some years past, and I now consider the examination with the fingers within the os to be so far sufficient that upon consideration I am doubtful if I shall ever again employ the forceps in this way.

[7] Failures of selection may occasionally occur in this class and the choice of operation after the ordinary intrapelvic operations have failed should perhaps be considered here but is hardly within the scope of this article, other than to say that the very great maternal mortality of the section at this time seems to render it too severe an operation to be justified in the interests of the child alone. The choice in such cases would seem to lie between the operations of symphyseotomy, pubiotomy and perforation.

No.	Date	Operator.	No. of Conf.	Previous Labor.	Pelvis.	Before Labor	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
1.	1901	Kerr, J.M.M.	3.	Craniotomies.	Generally Contracted.		End of first stage.		Well.	Well.	
2.	1901	" "	1.		" cd. 3¼		do.		Well.	Still (prob. before oper.)	
3.	1901	" "	2.	Craniotomy.	" Flat. cd. 2¾	Yes.			Well.	Well.	
4.	1901	" "	4.	All still.	" Flat. cd. 3½	Yes.			Well.	Well.	
5.	1901	" "	1.		" Flat. cd. 3.	Yes.			Well.	Died.	
6.	1901	" "	2.		" cd. 3¼	Yes.			Well.	Well.	
7.	1901	" "	1.		" cd. 3¼	Yes.			Well.	Well.	
8.	1901	" "	3.	Craniotomies.	Flat. cd. 3¾			Yes.	Well.	Well.	
9.	1902	" "	1.		" Flat. cd. 2½	Yes.			Well.	Well.	
10.	1902	" "	4.	Induction and 2 Craniotomies.	Flat. cd. 3¾		Os partly dilated.		Well.	Well.	
11.	1902	" "	3.	1 Induction & 2 Craniotomies.	" Flat. cd. 3¾		End of first stage.		Died.	Well.	Septic Peritonitis.
12.	1902	" "	1.		" Flat. cd. 3¼	Yes.			Died.	Well.	1 qt. of blood in abdomen. Catgut sutures untied. Collapse considered unimportant and untreated.
13.	1903	" "	1.		" cd. 3¼	Yes.			Well.	Well.	
14.	1903	" "	5.	All still.				Neglected Case.	Well.	Well.	Porro.
15.	1903	" "	1.		" Flat.		Yes.		Well.	Well.	
16.		" "	3.	1 Caesarian. Case 6.	" cd. 3¾	Yes.			Well.	Well.	2 Cae. (Case 6.)
17.	1903	" "	4.	1 Induct. died. 4 still.			Os well dilated.		Well.	Well.	
18.	1903	" "	4.		Flat. cd. 3¾		Os fully dilated.		Well.	Well.	
19.	1903	" "	2.	Caesarian.			Yes.		Well.	Well.	2nd. Cae.
20.	1904	" "	3.	1 Still, 2 Craniotomies.	" Flat. cd. 3⅝		Some hours.		Well.	Well.	
21.	1904	" "	9.	8 Still.	" "	Yes.			Well.	Well.	
22.	1904	" "	3.	Indus. Still. Craniotomy.	" "	Yes.			Well.	Well.	
23.	1904	" "	8.	5 Still. 2 Living.	" cd. 3⅝	Yes.			Well.	Well.	
24.	1904	" "	1.		" " cd. 3¼			Yes.	Well.	Well.	Porro. Exam. Outside.
25.	1904	" "	4.	3 Still.	" " cd. 3½		Os well dilated.		Well.	Well.	
26.	1904	" "	1.		" cd. 3⅛	Yes.			Well.	Well.	
27.	1904	" "	1.		" cd. 3¼		Os well dilated.		Well.	Well.	
28.		de Lee, J.B.	2.	Craniotomy.	Kyphoscoliotic. cd. 8½ c.m.		8 hours.		Well.	Well.	
29.		" "	7.	1 Craniotomy.	Osteomalacic. cd. 9½ c.m.	Yes.			Well.	Well.	
30.		" "	4.	1 Craniotomy. 1 Caesarian.	Generally Contracted. cd. 10½ c.m.	Yes.			Well.	Well.	
31.	1900	Sinclair, W.J.	2.	Still.	Small.	Yes.			Well.	Well.	This operator 6 previous sections
32.	1900	" "	3.	2 Craniotomies.	Contracted.		Yes.		Well.	Well.	

No.	Date	Operator	No of Cons.	Previous Labor.	Pelvis.	Before Labor.	Early in Labor	Late in Labor.	Result Mother	Result Child	Remarks.
33	1900	Sinclair, W.J	3.	Still and Died. Diffgicult	Flat rachitic	Yes.			Well.	Well.	
34	1900	" "	7.	3 Craniotomies.	Small.	Yes.			Well.	Well.	
35	1901	Voorhes, Jas. D.	1.		Kyphotic. 9¼ cm.			3½ days.	Well.	Well.	Cervix dil. & bags at term. 84 hours labor.
36	1902	" "	6.	Induction and Cran.	8 c.m.		7 hours dilatation & bags.		Died.	Well	Operation typical & easy. Became septic. Secondary hysterectomy.
37	1904	" "	2.	Premature.	Flat. 7¾ c.m.	Yes.			Well.	Well.	Septic puerperium
38	1904	" "	3.	Premature and Cran.	7¾ c.m.		10 hours.		Well.	Well.	
39	1905	" "	1.		Rigid cervix.			Induced & bags 2 days Forceps.	Well.	Well.	
40	1897	Boyd, G.M.	2.	Cae. Section.		Yes			Well.	Well.	2nd. Cae. Section.
41	1897	" "	2.	Cran.	Oblique.	Yes.			Well.	Well.	
42	1898	" "	7.	Induc. and Cran.		Yes.			Well.	Well.	
43	1900	" "	3.	Cae. Section.		Yes.			Well.	Well.	3rd. Cae. Section.
44	1900	" "	3.	Still and Cran.			14 hours.		Well.	Well.	
45	1900	" "	4.	2 Craniotomies.		Yes.			Well.	Well.	
46	1901	" "	4.	3 Still.				11 hours & forceps.	Well.	Well.	
47	1903	" "	4.	3 Still. — Cae.	c.d. 8 c.m.	Yes.			Well.	Well.	2nd. Cae
48	1903	" "	multip	1 Craniotomy.	7½ c.m.	Yes.			Well.	Well.	
49	1903	" "	1.		6 c.m.	Yes.			Well.	Well.	
50	1902	" "	2	Still.	7½ c.m.		12 hours.		Well.	Well.	
51	1906	" "	3.	Diggicult.	Occluded cervix.			24 hours	Well	Well	
52	1898	Cragin, E.B.	1.			Yes			Well.	Well.	
53	1898	" "	1.		7¾ c.m.		Yes.		Well.	Well.	
54	1898	" "	1.		Flat. 5 c.m.	Yes.			Well.	Well.	
55	1898	" "	1.		7¾ c.m.	Yes			Well.	Well.	
56	1899	" "	1.		Kyphotic. 10 c.m.	Yes.			Well.	Well.	
57	1901	" "	1.		Rachitic. 7¾ c.m.	Yes.			Well.	Well.	
58	1901	" "	1.					14 hours under midwife.	Well	Well	Horseshoe Kidney.
59	1898	Markoe, J.W.	1.		8½ c.m.		Yes.		Died.	Well.	Peritonitis, and Pneumonia.
60	1902	" "	2.		8 c.m.	Yes.			Well.	Well.	Septic Puerperium.
61	1902	" "	3.	Premature Still.	8½ c.m.	Yes.			Well.	Well.	" "
62	1904	" "	1		Nagele 9½ c.m.		20 hour 1st. stage.		Well.	Well.	
63	1904	" "	1.		Male		Induced & bougie		Well.	Well.	Septic Puerperium.

No.	Date	Operator.	No. of Conf.	Previous Labor.	Pelvis.	Before Labor.	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
64.	1904	Markoe, J. W.	3.	1 Caesarian.	8 c.m.	Yes.			Well	Died	Atalectatic Premature Hydraminos.
65.	1904	" "	1.		Gen. cont.	Yes.			Well	Well	
66.	1904	" "	11.		Osteomalacic		Yes.		Well	Died	Atalectatic. Premature. Septic Wound.
67.	1904	" "	5.	Difficult and Still.	9 c.m.			4 days induction. Strong pains	Well	Well.	Septic Wound and Puerperium.
68.	1905	" "	2.		8 c.m.	Yes.			Well	Well	
69.	1906	" "	1.		7½ c.m.	Yes.			Well	Well.	
70.	1905	" "	6.		Male. 8¾ c.m.	Yes.			Well	Well	Septic Puerperium.
71.	1905	" "	3.	Inductions.	8½ c.m.	Yes.			Well	Well	
72.	1905	" "	1.		8½ c.m.	Yes.			Well	Still	Atelectatic.
73.	1905	" "	3.		8¾ c.m.	Yes.			Well	Well	
74.	1905	" "	2.	Still.	Atresia.	Yes.			Well	Well	
75.	1900	Davis, Asa B.	1.		Oblique. 9 c.m.		Yes.		Well	Well.	
76.	1901	" " "	1.		Flat. 8 c.m.			48 hours.	Well	Still.	Septic Puerperium.
77.	1901	" " "	1.					30 hours midwife.	Died	Died	Septic before operation. Lived 22 hours. No hysterectomy.
78.	1903	" " "	1.		Gen. con. 8 c.m.		9 hours.		Well	Well.	
79.	1903	" " "	3.	Still and Died.	Funnel shape.		Yes.		Well	Well.	
80.	1903	" " "	1.		Oblique.		Yes.		Well	Well	
81.	1903	" " "	1.		Kyphoscoliotic.	Yes.			Well	Well	Myomectomy. small fibroid.
82.	1904	" " "	1.		Oblique. 9 c.m.			Operation Dilatation Strong Pains.	Well	Well.	
83.	1901	" " "	2	Caesarian.	Gen. con. 7½ c.m.			Previous Intra-pelvic Operating.	Died.	Well	Purulent peritonitis. 2nd. Caesarian.
84.	1900	" " "	3	Easy.	8 c.m.		16 hours first stage.		Well	Well	
85.	1903	" " "	2	Caesarian.	See Case 89.		some hours first stage.		Well	Well	2nd. Caesarian.
86.	1904	" " "	1.		8 c.m.		long 1st stage.		Well	Well.	
87.	1905	" " "	1.		Funnel shape.			2 days prev. Forceps.	Died	Died	Purulent Peritonitis.
88.	1904	" " "	1.		Gen. cont. 7½ c.m.			15 hours forcible labor.	Well	Died	
89.	1905	" " "	4.	Cran. 2 Caes.	Oblique flat.	Yes.			Well	Well	
90.	1905	" " "	1.		8¼ c.m.			7 hours second stage.	Well	Well	
91.	1904	" " "	2.	Caesarian.	8½ c.m.		Yes.		Well	Well	

No.	Date	Operator.	No. of Conf.	Previous Labor.	Pelvis.	Before Labor.	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
92.	1905	Davis, Asa B.	1.		8 c.m.			2nd stage 20 hours Strong labor.	Well	Well	
93.	1906	" " "	1.		10 c.m.			37 hours extraction attempted	Well	Well	
94.	1903	Kasper.	2.	Craniotomy.	7½ c.m.	Yes.			Well	Well	
95.	1903	"	3.	Craniotomy.	8½ c.m.		Yes		Well	Well	
96.	1903	"	1.		6½ c.m.	Yes.			Well	Well	
97.	1897	Schauta clinic	1.		7½ c.m.			33 hours. rigid uterus.	Well	Well	
98.	1897		1.		7½ c.m.		12 hrs. 1st stage.		Well	Well	
99.	1897		1.		7½ c.m.		12 hrs. 1st stage.		Well	Well	
100.	1897		2.	Miscarriage.	8 c.m.			3 days.	Well	Well.	
101.	1897		1.		6½ c.m.		7 hrs. 1st stage.		Well	Well.	
102.	1897		3.	Craniotomy.	6½ c.m.		4 hrs. 1st stage.		Well	Well.	
103.	1897		3.	Still.	8¾ c.m.		3 hrs. 1st stage.		Well	Well	
104.	1897		3.	Still.	Oblique. 7 c.m.		7 hrs. 1st stage.		Well	Well	
105.	1897		1.		7 c.m.		3 hrs. 1st stage.		Well	Well	
106.	1898		3.		8 c.m.		24 hrs. 1st stage.		Well	Well	
107.	1898		2.	Natural.	Rachitic. 6¼ c.m.		7 hrs. 1st stage.		Well	Well.	
108.	1898		2.	Caesarian.	Gen. cont. 6 c.m.		2 hrs. 1st stage.		Well	Well.	
109.	1898		1.		Osteomalacic. 4¼ c.m.		6 hrs. pains.		Well	Well.	
110.	1898		1.		7½ c.m.		18 hrs. 1st stage.		Well	Well.	
111.	1898		5.	Caes. Symphyseotomy.	8 c.m.		7 hrs. pains.		Well	Well.	
112.	1898		2.	Craniotomy.	7½ c.m.		12 hrs. 1st stage.		Well	Well	
113.	1898		2.		8½ c.m.		10 hrs. pains.		Well	Well.	
114.	1898		4.	Craniotomy.	7¾ c.m.		8 hrs. pains.		Well	Well	
115.	1898		1.		7½ c.m.		7½ hrs. pains.		Well	Well.	
116.	1898		2.	Still.	Kyphoscoliotic. 6½ c.m.		3 hrs. 1st stage.		Well	Well	
117.	1899		2.	Decapitation.	7½ c.m.		14 hrs. 1st stage.		Well	Well	
118.	1899		1.		Gen. cont. 6¼ c.m.		11 hrs. 1st stage.		Well	Well	
119.	1899		1.		Gen. cont. 6⅞ c.m.			36 hours.	Well	Well	
120.	1899		3.	Caes. Cran.	7½ c.m.		6 hrs. 1st stage.		Well	Well	
121.	1899		1.		8½ c.m.			3 days 1st stage.	Well	Well	
122.	1899		1.		8½ c.m.			24 hours 1st stage.	Well	Well.	

No	Date	Operator.	No of Conf.	Previous Labor.	Pelvis.	Before Labor.	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
123	1899	Schauta Clinic.	1.		7 c.m.		2hrs. 1st stage.		Well	Well	
124	1899		1.		7½ c.m.		16hrs. 1st stage.		Well	Well	
125	1899		3.	Craniotomy.	7½ c.m.		8 hrs. 1st stage.		Well	Well	
126	1899		5.	Difficult	Osteomalacic			24 hours powerful pains.	Well	Well	Porro.
127	1899		9.		Osteomalacic		12hrs.		Well	Well	
128	1899		1.		7½ c.m.			9 days.	Well	Well	
129	1899		3.	Cran. Caes.			3hrs.		Well	Well	
130	1899		1.		6¾ c.m.		8½hrs. 1st stage.		Well	Well	
131	1899		1.		7½ c.m.		5½ hours pains.		Well	Well	
132	1900		1.		7½ c.m.		4hours. pains.		Well	Well	
133	1900		2.	Caes.	6½ c.m.		15hrs. 1st stage.		Well	Well	
134	1900		4.	1 Caes.	6½ c.m.		Some hours 1st stage.		Well	Well	
135	1900		3.	Decapitation and Craniotomy.	5½ c.m.			3 day.	Well	Died.	Porro.
136	1900		4.		Osteomalacic			28 hours.	Well	Well.	Porro.
137	1901		4.	Craniotomy.	7 c.m.		Some hours 1st stage.		Well	Well	
138	1901		2.	Craniotomy.	7½ c.m.		5hrs. 1st stage.		Well	Well	
139	1901		1.		6½ c.m.		16hrs. 1st stage.		Well	Well	
140	1901		2.	Craniotomy.	8 c.m.		3hrs. 1st stage.		Well	Well	
141	1901		1.		5½ c.m.		2hrs. 1st stage.		Well	Well.	
142	1901		1.		7½ c.m.		14hrs. 1st stage.		Well	Well	
143	1901		7.	2 Craniotomies	7½ c.m.		4hrs. 1st stage.		Well	Well	
144	1901		1.		8 c.m.		12hrs. 1st stage.		Well	Well	
145	1901		3.	Craniotomy.	7 c.m.		12hrs.		Well	Well	
146	1901		1.		7 c.m.		6hrs. 1st stage.		Well	Well	
147	1901		2.	Still.	8½ c.m.		7hrs. 1st stage.		Well	Well	
148	1901		2.	Caes.			6hrs.		Well	Well	
149	1901		1.		7½ c.m.		26hrs. 1st stage.		Well	Well	
150	1901		1.		5 c.m.		5hrs. 1st stage.		Well	Well.	
151	1901		1.		7¾ c.m.		10hrs. 1st stage.		Well	Well	
152	1901		1.		7½ c.m.		27hrs. 1st stage.		Well	Well	
153	1901		2.	Still.	6¾ c.m.		25hrs. 1st stage.		Well	Well	
154	1902		1.		Anchylosed Coccyx		6hours.		Well	Well	

No.	Date	Operator.	No. of Cons.	Previous Labor.	Pelvis.	Before Labor	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
155	1902	Schauta Clinic	3.	Craniotomy.	8½ c.m.		24 hrs. 1st stage.		Well	Well	
156	1902		2.	Craniotomy.	8½ c.m.		6 hrs. 1st stage.		Well	Well	
157	1902		2.	Still.	7 c.m.			39 hours 2nd stage.	Well	Well	
158	1902		6.	Craniotomy.	7 c.m.		16 hrs.		Well	Well	
159	1902		3.	Craniotomy.	7½ c.m.			20 hours. Severe labor.	Well	Well	
160	1902		3.	Caes.	8 c.m.		18 hrs. 1st stage.		Well	Well	
161	1902		1.		7 c.m.		11 hrs. 1st stage.		Well	Well	
162	1902		1.		7 c.m.		11 hrs. 1st stage.		Well	Well	
163	1902		1.		8 c.m.			37 hours.	Well	Well	
164	1902		1.		7¾ c.m.		7 hrs. 1st stage.		Well	Well	
165	1902		1.		8 c.m.		8 hrs. 1st stage.		Well	Well	
166	1902		1.		7½ c.m.		7 hrs. 1st stage.		Well	Well	
167	1902		7.	Embryotomy.	8 c.m.		7 hrs. 1st stage.		Well	Died	Trotz wiederbelebungs versuchen.
168	1902		2.	Caes.	7½ c.m.		8 hrs. 1st stage.		Well	Well	
169	1903		3.	Craniotomy.	7 c.m.		12 hrs. 1st stage.		Well	Well	
170	1903		4.	2 Craniotomies.	8 c.m.		23 hrs. 1st stage.		Well	Well	
171	1903		1.		8½ c.m.		16 hrs. 1st stage.		Well	Well	
172	1903		1.		7½ c.m.		9 hrs. 1st stage.		Well	Well	
173	1903		1.		7 c.m.		14 hrs. 1st stage.		Well	Well	
174	1903		2.	Miscarriage.	6½ c.m.		8 hrs. 1st stage.		Well	Well	
175	1903		7.		Osteomalacic		3½ hrs. 1st stage.		Well	Well	
176	1903		1.		Nagele.		16 hrs. 1st stage.		Well	Well	
177	1903		1.		5½ c.m.		18 hrs. 1st stage.		Well	Well	
178	1903		2.	Still.	8 c.m.		7 hrs. 1st stage.		Well	Well	
179	1903		1.		7¾ c.m.		11 hrs. 1st stage.		Well	Well	
180	1903		3.		8 c.m.			30 hours.	Well	Well	
181	1903		1.		5 c.m.		19 hrs. 1st stage.		Well	Well	
182	1903		1.		8 c.m.		34 hrs. 1st stage.		Well	Well	
183	1903		5.	Craniotomy.	8 c.m.		10 hours.		Well	Well	
184	1903		1.		7½ c.m.		12 hrs. 1st stage.		Well	Well	
185	1904		1.		7½ c.m.		16 hours.		Well	Well	
186	1904		1.		7⅝ c.m.		22 hrs. 1st stage.		Well	Well	

No.	Date	Operator	No. of Conf.	Previous Labor.	Pelvis.	Before Labor	Early in Labor	Late in Labor	Result Mother	Result Child	Remarks.
187	1904	Schauta Clinic	1.		8 c.m.			3days feeble pains. Membranes unruptured. Os 2 fingers.	Died	Well	Thrombosis.
188	1904		4.	Craniotomy.	7½c.m.		5hrs. 1st stage.		Well	Well	
189	1904		7.		Osteomalacic.		12hrs. 1st stage.		Well	Well	
190	1904		1.		8 c.m.		11hrs. 1st stage.		Well	Well	
191	1904		6.	Craniotomy.	Osteomalacic.		4hrs. 1st stage.		Well	Well	
192	1904		1.		8 c.m.		12hrs. 1st stage.		Well	Well	
193	1904		2.	Caes.	7¾c.m.	Yes.			Well	Well	
194	1904		2.	Caes.	9½c.m.		6hrs. 1st stage.		Well	Well	
195	1904		2.	Craniotomy.	6 c.m.		8hrs. 1st stage.		Well	Well	
196	1904		2.	Caes.	Anchylosed Coccyx.		3hrs. 1st stage.		Well	Well	
197	1905		1.		7 c.m.		26hrs. 1st stage.		Well	Well	
198	1905		1.		8 c.m.		22hrs. 1st stage.		Well	Well	
199	1905		3.	Caes.	6½c.m.		12hrs. 1st stage.		Well	Well	
200	1905		3.	Craniotomy.	7½c.m.		8hrs. 1st stage.		Well	Well	
201	1897	Leopold.	1.		6½c.m.			52hours.	Well	Well	
202	1897		1.		5½c.m.		8hours.		Well	Well	
203	1897		2.	Caes.	7½c.m.			36hours.	Well	Well	
204	1897		2.	Craniotomy.	6 c.m.		3hours.		Died	Well	Peritonitis.
205	1897		3.	Craniotomy.	7 c.m.		19hours.		Well	Well	
206	1897		4.	Craniotomy.	7½c.m.			23hours severe labor.	Died	Well	Peritonitis.
207	1897		2.	Caes.	7½c.m.			23hours rigid uterus.	Well	Well	
208	1897		2.	Craniotomy.	6 c.m.		14hrs. 1st stage.		Well	Well	
209	1898	Grache, S. Buenos Ayres.	1.		6 c.m.		7hours.		Well	Well	
210	1899				6 c.m.	Yes.			Well	Well	
211	1901		1.		7 c.m.		5hrs. 1st stage.		Well	Well	
212	1901		3.	Still.	7 c.m.	Yes.			Well	Well	
213	1901		1.		7 c.m.		7hours.		Well	Well	
214	1898	Küstner, O.	1.		7½c.m.	Yes.			Well	Well	
215	1898		6.	Craniotomy. Symphyseotomy Caesarian.	8 c.m.	Yes.			Well	Well	
216	1898		2	Craniotomy and Symphyseotomy	6¾c.m.		3½hours.		Died	Well	Peritonitis.

No.	Date	Operator.	No of Conf.	Previous Labor.	Pelvis.	Before Labor.	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
217	1898	Küstner, O.	3.	Craniotomy.	7¾cm		Some hours.		Well	Well	
218	1899		1.		7¾cm	Yes.			Well	Well	
219	1899		4.	Craniotomy.	8¼c.m.		Strong pains.		Well	Well	
220	1899		8.	Craniotomy.	8¼c.m.	Yes.			Well	Well	
221	1899		2.	Caes.	7c.m.		12hours		Well	Well	
222	1899		4.	Cran. and Caes.	7½c.m.			long 2nd stage	Died		Infection.
223	1899		12.	Craniotomy Symphyseotomy.	7½c.m.	Yes.			Well	Well	
224	1897	Heidenhain, L.	8.	Caes.	4c.m.		Yes.		Well	Well	
225	1899		5.		Osteomalacic	Yes.			Well	Well	
226	1899		1.		8c.m.	Yes.			Well	Well	
227	1901		1.		8c.m.			Yes.	Well	Well	
228	1897	Bar, Paul.	3.	Caes.	Osteomalacic	Yes.			Well	Well	
229	1897		2.	Still.		Yes.			Well	Well	
230	1899		3.	Version Induction.		Yes.			Well	Well	
231	1897	Gummert.	3.	Still.	Osteomalacic	Yes.			Well	Well	
232	1897		5.	Still.	6½c.m.	Yes.			Well	Well	
233	1898		3.	Craniotomy.	6c.m.	Yes.			Well	Well	
234	1898		4.	Craniotomy.	Bony tumor.	Yes.			Well	Well	
235	1898		5.	Craniotomy.	7c.m.		12hours.		Well	Well	
236	1899		1.		8c.m.			3days.	Well	Well	
237	1899		3.	2 Still.	7c.m.		end of 1st stage.		Well	Well	
238	1900		1.		5c.m.		Yes.		Well	Well	
239	1902	Brindeau.	1.		7½c.m.	Yes.			Well	Well	
240	1902		1.		7c.m.	Yes.			Well	Well	
241	1902		2.	Caes.	7½c.m.	Yes.			Well	Well	
242	1900	Essen-Möller, Elis	1.		5c.m.		Yes.		Well	Well	
243	1902				7½c.m.	Yes.			Well	Well	
244	1902				8c.m.			9hours 2nd stage	Well	Well	
245	1902		3.	Diffficult.				36hours	Well	Well	
246	1897	Reynolds, E.	4.	2 Still.	9c.m.		19hrs. 1st stage.		Well	Well	
247	1897		3.	2 Still.	8½c.m.			11hours. high forceps Sailed.	Well	Well	
248	1898		2.	Premature.	8c.m.	Yes.			Well	Well	

No.	Date	Operator	No. of Conf.	Previous Labor.	Pelvis.	Before Labor.	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
249	1898	Reynolds, E.	2	Difficult.	8½ c.m.		5hrs 1st stage.		Well	Well	
250	1898		2.	Difficult.	8½ c.m.		7hrs. 1st stage.		Well	Well	
251	1898		2.	Difficult.	8 c.m.		3hrs. 1st stage.		Well	Well	
252	1899		1.		7½ c.m.		14½ hours.		Well	Well	
253	1899		5.	Cran. Induction. Induction Cran.	7½ c.m.		7hrs. 1st stage		Well	Well	
254	1899		2	Craniotomy.	Small.			36 hours.	Well	Well	
255	1899		1.		8 c.m.		18hrs. 1st stage.		Well	Well	
256	1899		1.		8½ c.m.	Yes.			Well	Well	
257	1899		4.	Caes.	8½ c.m.	Yes.			Well	Well	
258	1900		9.	All Operative.	8½ c.m.	Yes.			Well	Well	
259	1900		1		8½ c.m.	Yes.			Well	Well	
260	1900		3.	Caes.	8½ c.m.	Yes.			Well	Well	
261	1900		1.		Oblique.		7hrs. 1st stage.		Well	Well	
262	1900		1.		7½ c.m.			Some hrs. 2nd stage 19½ hrs.	Well	Well	
263	1902		2.	Version eclampsia.	Justo-minor 7½ c.m.	Yes.			Well	Well	
264	1904		4.	Difficult intra-pelvic operations.	Cicatricial vagina.	Yes.			Well	Well	
265	1904		2.	Difficult version.	Justo-minor.	Yes.			Well	Well	
266	1904		2.	Caes.	Justo-minor 8½ c.m.	Yes.			Well	Well	
267	1905		3.	Forceps still.	Excessive Curvature 8 c.m.	Yes.			Well	Well	
268	1905		1.		Justo-minor 8½ c.m.	Yes.			Well	Well	
269	1906		2.	Caes.	Justo-minor 8½ c.m.	Yes.			Well	Well	
270	1906		2.	Version and Caes.	Justo-minor 7½ c.m.	Yes.			Well	Well	
271	1901	Davis, E.P.	1.				1st stage.		Well	Well	
272	1901		2.	Forceps.	Small and malpresentation.		1st stage.		Well	Well	
273	1902		1.		7 c.m.			2nd stage	Well	Well	
274	1902		3	Forceps and Induction.	Small		Yes.		Well	Well	
275	1902		1		Small.		Yes.		Well	Well	
276	1903		1.		Small.		Yes.		Well	Well	
277	1903		1		Small			2nd stage	Well	Well	

No	Date	Operator	No of Conf.	Previous Labor.	Pelvis.	Before Labor	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
278	1904	Davis, E. P	1.		8 c.m.		Yes		Died	Well	Infection.
279	1904		1.		7½ c.m.		Yes.		Well	Well	
280	1904		1.		8 c.m.		4 to 5 hours.		Well	Well	
281	1905		2.	Still	7½ c.m.		Yes.		Well	Well	
282	1905		1.		Small.			2nd stage.	Well	Well	
283	1905		3.	Difficult	7½ c.m.			2nd stage.	Well	Well	
284	1905		3.	Craniotomy.	Small.		18 hours.		Well	Well	
285	1905		1.		Small.			40 hours.	Well	Well	
286	1905		1.		Small.		Yes		Well	Well	
287	1906		4.	2 Induced.	Small Oblique.		1st stage		Well	Well	
288	1906		1.		Small.		1st stage.		Well	Well	
289	1906		1.		Small		Yes.		Well	Well	

This table must not be interpreted as giving the full Caesarian lists of the operators quoted, since it excludes cases previous to the last ten years, and some cases in which the data were insufficient for quotation. It was intended that the table should cover cases of the classical Caesarian section only, but since this has been practically abandoned for late and neglected cases, it proved necessary to include the Porros there.

well, they do well under the primary Cesarian section, and for them in case of doubt the section should be chosen; these women in especial should never be subjected to the combination of labor and a peritoneal operation.

It may be objected to most of what I have said in this paper that such practice is beyond the powers of the general practitioner. I would respond, "It is undoubtedly so." This is not work for inexperienced men. It must always belong to those who are really obstetrical experts, and it is for them to bring about the conditions which permit such work.

Under the conditions of practice of but a few years ago the majority of cases of really difficult labor reached the hands of obstetric experts only after the failure of prolonged labor, and in hospital practice, and in some localities in private practice, this is still the rule. With such cases we must do the best we can. They are, however, not usually fit subjects for the Cesarian section. All results show that the late section, even when followed by a hysterectomy, is so fatal an operation as to be justifiable only for the absolute indication, or in those cases in which the mother's condition is so bad that the chances for the child take precedence.

This point is conceded by experts, but has been too little appreciated elsewhere. It is our duty to drive it into the comprehension of the general profession. The mortality of the late section is high when derived from the statistics of men who habitually operate early, but occasional operators rarely publish fatal cases, and if we could obtain complete statistics of all the operations done, I am sure that we should be appalled by the mortality of the late section.

A second and even more important practical point is, that we should teach the general practitioner that the time when his duty to his patient should lead him to seek the advice of a specialist is when he first feels anxiety about a pregnancy or an impending labor, and not after the prospects of both of his patients have been compromised by exhaustion in labor. In my own home, where the Cesarian section is perhaps looked upon with more favor than in any other locality in America, such consultations are steadily increasing in frequency, and especially among the better class of practitioners, and this should become the universal rule everywhere.

I think, too, that these signs of the times already show the possibility of a great improvement in the status of obstetrical practice in the future. The obstetrician of to-day is, as a rule, in the unfortunate position of competing with the general practitioner for the care of normal labor. I am far from underestimating the value of the best attendance in even normal cases, but we must not ignore the practical fact that there are now great numbers of men who can furnish a class of attendance on normal labor, and on ordinary

operative labor, which is so nearly that of the expert as to satisfy the community. Most such men feel unwilling to decline the obstetric work which comes up among the families whom they attend for other troubles, and, however conscientious they may be, this fact renders it difficult for them to ask for consultations during pregnancy with specialists who are their competitors for the care of normal labor.

Once we can teach the great mass of the profession that real success in the management of difficult cases is only to be attained by foreseeing their difficulty, and that it is possible for sufficiently experienced men to select these difficult cases during pregnancy; once we can teach them that in such cases the ordinary, reckless and careless habit of trusting to nature, *i. e.*, to blind luck in labor, and of sending for a specialist only after the mischief is done merely leads to ill health to the mother and death to the baby, — we shall find all the better class of general practitioners willing and glad to consult beforehand men who have especial knowledge, and who do not attend normal labor.

It this proves to be the future of obstetrics it cannot be doubted that obstetricians who are not at every one's beck and call for normal labor, but who find their practice in the management of really difficult cases alone will be in a far more enviable position than that occupied by most obstetric experts of to-day.

THE ORIGIN OF RIGHT-HANDEDNESS.

BY GEORGE M. GOULD, M.D.

Deprived for a time of the use of his right hand, Carlyle was struck both by the vast importance and the mystery of right-handedness. He forthwith pronounced the question of its origin as one "not to be settled and not worth asking except as a kind of a riddle." He was more correct in saying that right-handedness is "the very oldest human institution that exists, indispensable to all human co-operation whatsoever; no human cosmos possible to be ever begun without it." Since the entry in Carlyle's diary was made hundreds have despaired or failed in the same manner to see any possible solution of the "riddle," and all the time, to an extent which Carlyle could never have dreamed, the extension of the influence of right-handedness has penetrated more profoundly and dominatingly into all the departments of practical, commercial, manufacturing and social life. There is no medical science or practice which can ignore it; the law must take constant cognizance of it; mechanics and tool-making are dominated by it; in every evolution or drill of ships or soldiers it is obeyed and kept in mind; and to railroads it dictates wrecks and millions of dollars of expense or savings. It makes or mars the calling, or failure, the success, happiness, or suffering of far more persons than is usually suspected, and scarcely one of us is unaffected in some way for good or ill by our dextral or sinistral complications, co-ordinations and inco-ordinations. There are at least two million left-handed persons in our country, and they are either excluded or handicapped in almost every occupation they may adopt.

But Carlyle's insoluble "riddle" and the perplexities of hundreds of writers is now easily cleared up. The origin of right-handedness and left-handedness is plain, and equally so the history of the puzzle of "the Rule of the Road." Barbaric custom and war are the source of right-handedness; medicine, including cerebral anatomy and physiology, is able to explain the development of general right-handedness upon which rest all the mysteries of the Rule of the Road.

Beyond question the beginnings of right-handedness, and of general right-sidedness, date historicly to primitive war and barter and the tally stick. The first differentiation of function in the use of the hands doubtless arose in telling off the left hand and arm to hold the shield which should protect the heart side of the body from the adversary's blows. This hand thus became known as the shield-hand. Except in a few very modern tasks the fact has dictated that the left hand has been generally the holding hand, chosen instinctively for the more passive or holding tasks, those requiring the less delicate or expert proficiency. Custom and language have long crystallized into an acceptance of the usage and even gone so far as to call the unlucky and misfortunate and awkward by the words *left, sinister, sinistral, gauche*, etc. Conversely, the right hand was chosen for the positive fighting task, and called the spear hand, and some of the most prized virtues, dexterity, dextrousness, etc., were named after the cultivated abilities of the right hand. The oldest Greek vases, and Homer, even the cave-men, demonstrate the existence of the distinctions of shield hand, spear hand, and of right-handedness generally. In Xenophon's "Anabasis" the usages had become the routine of all military drill and discipline. In Smith's "Dictionary of Greek and Roman Antiquities" under the caption "Exercitus," may be found illustrations of the distinction emphasized. For instance:

> "The facing to the right was always the usage, because if the evolution were performed in the face of an enemy, the shielded side could be presented toward him. . . . Similar maneuvers took place if the enemy appeared on the left, though, as this was the shielded side of the soldiers, and the danger was consequently less, it was frequently thought sufficient to keep the enemy in check by means of the cavalry and light troops. One point that a general had to be on his guard against was the tendency of an enemy, when advancing ἐπὶ φάλαγγος, to sheer off towards the right, each man pressing closer to his right-hand neighbor in order to protect his unshielded side, so that the right wing frequently got beyond the left wing of the enemy."

The Roman army *exercitus* fixed the working of right-hand and left-hand orders down to the most minute details, and at West Point to-day the thousand peculiarities of military drill and custom, and command are exemplifications of the

consequences of shield hand and spear hand. Xenophon is still in command of every army in the world. Within the memory of living men companies of American militia often had, at the end, tail, or left of the battalion, a left-handed soldier, placed there in order that his musket, carried in his left instead of his right hand, might not clash with the right hand and its held gun of his next, right-handed, fellow.

In the word *digit*, and in the Roman numerals, and in the five strokes or cuts of the tally stick, we have the most abundant and abiding testimony as to the origin of right-handedness and the location of the speech center, writing center, and counting center in the left half-brain. Counting, writing and speaking are single functions united into act by the volition, the seal and ratification of willing. By all savages for all time, in bargaining, the right hand has been held aloft, and one, two, three or four fingers shown and flung at the opposed bargainer. The gesture is always that of throwing the fingers or numbers at him. The whole hand is flung more energetically, when five is intended, *i. e.*, the letter V of the fork of the thumb and first digit. The scratches on the tally stick tell the same story and the diagonal thumb line, denoting *five*, run across four digits from upper left to lower right hand corner, indicates the thumb or fifth number. And so on, to *ten* or *X*, the crossed or doubled thumbs and to all other numbers. A close study of the Chinese and Japanese numerals convinces that the Roman system described, ancient as it is, is but a late offshoot of far older oriental usage, in general features the same the world over, and ages before history began.

The significance of these illustrations of primitive and persisting sign language, gesture language and counting language is that as they are executed by the right fingers and right hand, the motions of these fingers and this hand are instituted and innervated by " a center " or collection of brain cells in a certain spot (called Broca's convolution) placed in the left side of the brain. With one finger held up, or more, or the whole hand, with one or more cuts in the tally stick made, there was (and as the schoolboy's lip-motion in learning to read demonstrates) the spoken word, one, two, three, etc. Speech is almost the sole and surely the chief muscular function that is single, not double, and which must be executed from a single initiating center of power and control. It is the fusion of all bilateralism, of all bodily and mental components and diversities into the unitized resolve which the whole body, mind and future, must obey. For the right-handed man this center of nervous origin and control is not in the right half-brain, nor in both half-brains, but only in the left. There also are the nervous or ganglionic mechanisms of memory, of writing, of the expert vision, of hearing, of leg-and-foot motion, which may be or are necessarily bound up with the right-hand deeds, the laryngeal and vocal acts issuing in language, or resolve, or social determination. The two halves of the brain are remarkably independent and separated from each other, as a thousand facts of physiology, disease and injury to brain-substance show. Therefore an injury to the speech or writing centers or to the centers of motion of the right-hand fingers of a right-handed person at once paralyzes or destroys, partly or wholly, the power of speech, of writing, of memory, the significance of words, etc. A similar injury to or disease of the corresponding parts of the right brain has no effect whatever upon these functions and acts. The child is born with no discoverable differences of cerebral structure or substance of the two cerebral hemispheres, and none ever appears thereafter. But about the sixth month of life the babe, which will naturally become a right-handed one, begins to put forth the right hand instead of the left to grasp an object, and the cerebral matter about the left third frontal convolution, however unchanged or like that on the right side, is thenceforth increasingly and exclusively used to control the organs of speech, of writing and of memory. Just here comes into view the overlooked fact that the degree of right-handedness, of general dextrality and even of vocal and mnemonic function is different in different persons, and also that it is all a question of growth and progressive development. In the grunting savage or peasant the speech center, although located in the left brain, must be tremendously more simple than in a musician who knows by heart and sings and plays a thousand pieces of music, who speaks and writes a dozen languages, etc. The differentiation and complication of the cerebral mechanism whence spring all the acts begins in infancy with simple homogeneity, and grows in complexity with every year of added life. With each added year of differentiation the expertness grows, and it grows because the single cerebral mechanism has become more and more complex. Therefore with each added year the impossibility of educating the corresponding centers on the right-brain becomes greater. The ambidextery sillies must therefore begin with infants if they are to succeed in making a dextral child of one naturally sinistral. Moreover, historicly, the trend in all human beings is for them to become more and more exclusively and despotically either right-handed or left-handed, so that with each added generation the impossibility of ambidexterity will increase. Even now the attempt to reverse the law as existing in school children is both useless, expensive of life and in reality impossible. No attempt can wholly succeed; none should, and the partial successes produce cripples and awkwards, if not disease and tragedy. The most foolish, impertinent, ignorant, expensive, resultless and maiming fad is that of the ambidexterity mongers. They do not know what they want, do not know that they cannot succeed, do not know that they curse the victim of any partial success. In infancy the left-handed child may be trained to be a right-handed one, but never to be an ambidextrous one. Why should a violinist bow equally well with both hands, and finger equally well with both hands? Why should he write equally expertly with each hand?

The fatuity becomes amazing with the recognition of the fact that right-handedness is necessarily bound up with right-eyedness, with right-earedness, with right-footedness. To train the child to be ambidextrous, eyes, ears and feet, — all must be trained to equal expertness in all tasks, and this is ludicrously impossible. We are as much right-eyed as we are right-handed, as any one can prove by looking at the image of the finger or a pencil held upright a foot before the eyes. Alternate opening and closing of each eye demonstrates (with some exceptions understood by oculists) that the right eye is unconsciously the one chosen to " fix " the image.

The reason for this general choice of the arm and hand, of eye, of ear and of leg and foot for conjoined expert tasks is easily recognized. It insures a speedier and more accurate synthesis of the cerebral functions which must be co-ordinated into a single act and result. The independence of the two halves of the brain makes it necessary that the bodily organs most commonly acting together and most interdependent should be incited and controlled by the cerebral centers in close contiguity and in one side of the brain. There is a measureable slowness of nerve-current transmission (between 100 and 200 feet per second), and even if the connecting links (" commissural fibers ") between the two brain halves were much more intimate and numerous and short than they are, rapidity and accuracy of correlation and unification in willed act would be impaired; and the safety and decision of the entire organism imperiled, if one or two of the coacting centers were in opposite hemispheres. That in the right-handed all these centers of origination and control are in the left, and in the left-handed in the right half-brain, is an inevitable consequence of the location of the speech center and writing center exclusively in one or the other. Writing and speaking are closely interdependent, both in origin (gesture, sign language, counting, Roman numeral or digit-throwing), and in all subsequent history and evolution. Their centers of origin and control must therefore be in close neighborhood and intimate union. Vision which preceded and accompanies all must therefore be in the same side of the brain. This, of course, holds as to hearing and, although less differentiated, to the associated leg and foot movements.

An astonishing and interesting consequence of all this almost draws itself. It becomes plain that, in the right-handed, intellectual life and progress are by means of the mechanisms of the left cerebral hemisphere. There is no intellect as we understand it except through speech, vocal and written, and the instruments of this function exist only in the left brain of the right-handed, and in the right brain of the left-handed. Mentality of the dextral therefore lives preponderatingly in and through the left half-brain. The fact strongly emphasizes and capitally illustrates the great biologic law that all progress consists in differentiation of function. In the evolution of civilization each bit of cortical brain substance is being told off to a certain peculiar office. That large parts are still without particular and discoverable duties argues plainly for the great progress and differentiation of function in the future of humanity's advance. The areas of the more unused half-brain (the right in the right-handed, the left in the left-handed) occupied by the speech and writing centers in the more active half, show microscopically no failure or weakness of part or mechanism. If they did heredity would long since have eliminated the left-handed, and the right half-brain would become changed and atrophied except in those parts originating the muscular activity of the right side of the body. Possibly, the recurrence itself of the two or more per cent of left-handed persons prevents the atrophic tendency in the right-handed. Left-handedness is therefore probably not decreasing, and the forming organisms of the infant may become left-handed, etc., with no want of perfection in any part. The emergency finds the inherited mechanism ready for its task.

In this light and by reason of these facts one sees that materialism is absolutely disallowed. The speech and writing mechanisms of the brain do not as such exist, even functionally, in the fetus or newborn child. They are creations, slow creations, during childhood and youth. At any time they are instruments and mechanisms, expertly manufactured by something not themselves, used as a piano-key and string, and as all the keys and strings, as the piano itself, by something that plays upon them just as a pianist plays upon his instrument. That the instrument can or does make itself, that the player and piano are indistinguishable and of one substance, are the most unwarranted of pseudophilosophic assumptions. Far better than either philosophy or religion, physiology thus demonstrates the existence of the life and spirit of man, apart from the material of his body and its mechanisms.

There is much obscurity and misconception as to what really is the nature and fact of right-handedness, right-eyedness, etc. The crudest blunders, for instance, exist even in learned monographs as to right-footedness. In dressing, a dextral man begins by first putting his left foot in the left trousers-leg; he places his left foot upon the spade or shovel; he jumps from the right foot; kicks with the left; the boxer and prize-fighter places the left foot and arm forward; the rider vaults a horse from the near side, and with the left foot in the stirrup first;[1] the entered apprentice mason " steps off with the left foot first "; all soldiers, since time began, start the march by first advancing the left foot. All of these things are conclusive proofs of right-footedness, and not of left-footedness, as many claim. The right foot and leg are unconsciously chosen as the strongest, the most steady, best co-ordinated, most expert ones, with which the spring, the determining or force-giving factor, is made. It is of course nonsense that animals are right-footed or left-

[1] In the *Art of Horsemanship* Xenophon gives the most detailed instruction as to the method of mounting the horse, after which he says, " I think it good that the horseman should practice springing up from the off-side as well, on the chance that he may happen to be leading his horse with his left hand, and holding his spear in his right," etc.

footed. The differentiation could only arise with sign language and counting, and animals do not make gestures or count. No doubt that right-footedness in man is not so far advanced as right-eyedness and right-handedness; there are more exceptions, less differentiation of function, etc., but it is essentially present, and in process of evolution.

Right-eyedness is also subject to more exceptions than right-handedness because of the peculiar liability of the right eye to be thrown out of its function as the "dominant" one, or leader, by many ocular diseases, by injuries from blows, and especially by a more disabling optical defect (astigmatism, hyperopia, etc.). The struggle of nature to preserve the dominant function of the right eye is patent in the case of nearly every patient that comes into the oculist's office. The right will preserve its acuteness even under a greater optical defect than that of its fellow; the left is the one more frequently diseased and lost, and even with lessened visual sharpness the right is often retained as the dextral one. For there is tragedy when from any cause the right-eyed man in adult life is made into a left-eyed patient. Every act and co-ordination and judgment becomes slower, more awkward, more difficult and more inexact in result, because the visual factor in every act (and even every thought) is furnished by the opposite far-away and more inexpert center. There are few greater afflictions than one I now am witness of — paralysis of the upper lid of the right eye in a right-eyed person occurring in full adult or late life. The most amazing consequence of right-eyedness is lateral curvature of the spine. Approximately about 20,000,000 of the people of the United States have lateral curvature of the spine, and of these about three fourths, or about 15,000,000, indirectly owe their disease to right-eyedness. The deforming and crippling writing position which causes the deformity of the 15,000,000, is due to the necessity of bending the body and head to the left in order that the right-eye may see the pen point. The right eye must see the intellectual thing written even though the distortion of the back and tragedy of a life result!

When a right-handed person is made into a left-handed one by a broken arm, or by the equal misfortune of a foolish parent wiser than nature, the results are almost sure to be baneful. If undertaken early enough in youth, the foolishness of trying to train the right hand by whipping, tying up the left, etc., may sometimes succeed, but at the expense of a life of trial, handicap, or even wretchedness and disease. Ill success in life is often caused by this folly. It is chiefly the writing act that arouses the sorry parent and the ambidexterity-crank to their impertinent opposition. But it is precisely the writing act which locates the speech center in the side of the brain opposite the writing hand. Writing, bound up with speech and memory, is the demonstrated origin of the localization of the speech center. Science, disease, physiology, tumors of the brain, etc., have proved that one may be left-handed in everything except writing, and that the speech center is in the left half-brain. I have a patient who, as a boy, was cruelly compelled to stop writing with his left hand, and after years of torment he was made a dextral writer. And for forty years he has never been able to think and write at the same time. He cannot write the simplest letter that requires thought, planning or judgment. He sends miles or waits hours for a stenographer, and can dictate the most technical engineering plans with clearness and rapidity. Another patient has been made mentally morbid, and a life of invalidism has resulted from the same cause. In the United States there about are two million originally or persisting left-handed persons, a portion of whom are mental and even physical cripples from the injudicious antipathy of parents or teachers to the "south-pawed." In comparatively few cases is the attempted change entirely successful. They have a sufficiently hard time to get left-handed work benches, tools, etc., and to pursue the avocations of the right-handed, without doubling their handicap by dividing the centers required in a composite act between the two dissociate brain-halves. How pitiable is the lot of the left-handed soldier! I have two thorough-going left-handed patients who by training have learned to shoot a rifle from the right shoulder, but they depress the right eye below the gunstock and awkwardly sight with the left eye! When all his sinistral functions are performed by the left-handed man by means of the cerebral centers located in the right brain hemispheres he is as efficient, quick, intellectual, etc., as the right-handed person. The Jewish left-handed slingers, it is said, could cut a hair set up as a target. Because there are a few persons with the heart on the right side of the chest it would seem to be even more the duty of the ambidexterity societies and of officious parents to remove it to the left side by surgical operation! Let the left-handed child alone! Nature is quite as wise as the ignorant intermeddlers. For ages the stranger, the unknown and unusual person has been looked upon with dislike, and has even been persecuted because he differed from the one without other excellencies than that of being like his neighbors, or like the majority of them. The dislike of left-handedness is a relic of the same vicious egotism. The left-handed person is stupidly charged with being "sinister" and unlucky, and all because ages ago to the left or shield hand was given the natural task of protecting the heart and life of its master!

And a little quiet and unprejudiced observation would have shown that it is rather a division of tasks, a happy and advisable differentiation — not subordination — of function, that is coming about in the jobs which the left hand is commissioned to do. In the sterling old tasks of shoveling, pitchforking, chopping with the ax, etc., the left hand almost divides the honors equally with the right. In locomotive-engineer driving, it is indeed the left hand that is on the throttle valve. Especially in the musician's art both hands must be equally expert and active. The fingering of

the left hand of the violinist is technically as fine and dextrous a task as the bowing of the dextral hand. It is of vast significance that all tasks should be divided up and allotted to each hand, each eye and foot (perhaps to each ear?)— all except the one of intellect bound up with writing, speech and memory, which, necessarily single, must be shocked into action by a single and not a duplicated set of organs, which are placed only in one cerebral hemisphere. It is of no advantage to be able to eat with the knife or fork with each hand alternately and equally well; it is a positive disadvantage. Should every musician have two pianos, one as now constructed and another with the bass keys on the right, and should he learn to play equally well upon each piano? That is what ambidexterity means. The poor left-handed person is already almost entirely shut out from any musical calling, except that of singing, and there are many other avocations in which he is handicapped or doomed to failure. From this point of view one may wonder if the number of the left-handed will not decrease in the struggle for existence in civilization's progress of the future. There are no statistics to help us decide the question. The exclusion of such unfit ones will at least be only hastened by any interference with nature's production of left-handedness. With a very few years in childhood of nascent right-handedness or left-handedness started, the habit becomes so fixed that years of punishment, derision, strapping up the left hand and other methods of torture are utterly powerless to alter the developing and educating speech center in the right brain.

The bleatings, mooings, bellowings, roarings, etc., of vertebrate animals, together with the cries of the infant during its first months of life, are not language, or even the beginnings of language. Whether they express or are understood to express desire, pain, anger or passion, they are the voice, or suggestion of the voice, of the organism as a whole, undifferentiate, non-intellectual, — the cry of the abstract physiologic machine, wanting or pained, and as a unit; they are not inspired or guided by vision or by definite motived act. The air issues from the caverns of appetite and emotion, and in passing through the upper organs of respiration is slightly transformed into inarticulate sound. The vegetal or automatic organism is its origin and end. If innervated by the cortical centers these cries probably spring from a bilateral origin. Only when they become purposive in the slightest degree, when the other senses, and especially sight, are called in to furnish data and help for the motived and designed act, does the innervation of phonation arise in a single or one-sided center; the continuous evolution of the speech center thus becomes established and progressive. The "precise" but indefinite time at which this monolaterality begins is the "precise" but indefinite time when inarticulation becomes articulation. Articulate phonation is the intermediate of specialized and designed acts; it is the voice of intellect, choice and purpose. It is compositely formed out of the factors of sight, feeling, hearing, etc., furnished by individual, topographically placed, and neighboring cerebral centers. In a certain individual right-eyedness is doubtless the determining factor in localizing the developing speech-center in the left half-brain. The individual misfortune, possibly tragedy, comes from a compelled change of plan after the localization on one side is under way, or established. A higher error of refraction in the right eye, or the results of disease, such as keratitis, conjunctivitis, squint, etc., may bring about the misfortune. To produce left-eyedness, when obviable, by reckless operations is, in the surgeon, a scientific blunder. To will and compel right-handedness in the naturally left-handed is a crime.

Physiologically, therefore, the reason why an infant puts forth the right hand to grasp objects is because the right eye is the one which is nearest perfect visually, anatomically, or opticly. The law derived from the phylum of the entire past is that the right eye and right fore-foot, or right hand, must work together. In all animals the right eye governs the placing and action of the right front foot of the right side of the body, the guarding against dangers on the right side, etc. The left eye has the same office for the left side. Heredity has place in the creation of the more nearly perfect right eye. If the left eye of the infant is the better seeing eye it will grasp at objects with the left hand, and become left-handed. Handedness, if one may devise the word, becomes either right-handedness or left-handedness, according to the dictating condition of the better eyedness, right or left.

MEDICAL EXPERT TESTIMONY.*

BY E. W. TAYLOR, M.D., BOSTON.

THE subject upon which your secretary has asked me to speak has been much discussed from various points of view. It must, however, remain of interest until some more satisfactory system of expert testimony is devised than that at present in vogue. The existing method is admittedly unsatisfactory from the medical standpoint. Each great trial which excites much public interest is a clear indication of this fact. It is sufficiently evident that the medical man is placed at a disadvantage by present methods. Is there a remedy? So far as I have been able to observe, the legal profession as a whole thinks not. From time to time a vigorous agitation takes place, articles are written, propositions are made and nothing results. Some years ago in Boston the matter was seriously taken up, both by physicians and lawyers, but beyond various expressions of opinion no positive reform was instituted. Whatever the attitude of the law may be, physicians remain dissatisfied and are busily searching for methods of procedure which will not conflict with the rights of the people, but which will

* Read before the Worcester District Medical Society, Sept. 11, 1907.

place the medical profession in a more dignified position.[1]

In the first place, what are some of the difficulties of the present situation and how far are the charges against the medical expert witness justified? In what follows I shall attempt to approach the subject from the standpoint, first, of the court, secondly, of the jury, thirdly, of the attorneys for prosecution and defence, and, finally, from that of the medical expert witnesses appearing for the plaintiff and the defendant. It is clear that each of these elements in the modern jury trial looks upon the point at issue from a different angle.

I. The presiding justice maintains an absolutely unbiased attitude toward the litigation over which he is presiding. His estimate of the witness, whether or not such witness be classed as an expert, is based solely on the honesty, clearness of statement and knowledge of his subject which the witness shows. Quick to see the wavering of a prejudiced witness and the floundering of an ignorant one, to discover his honesty or prejudice, and to recognize straightforwardness, the judge naturally represents the intelligence of the situation, not only in points of law but also in the estimation of character.

II. The jury, men untrained in the law and also in medicine, stand as the final arbiters of the veracity, knowledge and credibility of the medical expert witness as of the ordinary witness. To make this even remotely possible the witness is cautioned to speak in commonplace language and to avoid even the semblance of technicality, however difficult of accomplishment this may be. He is continually being told, with varying degrees of severity by the attorneys and by the court, that he must simplify his language, that he must state facts and elucidate theories, however subtle and surrounded by obscurity they may be, in the language of the street. Conceive the futility of explaining the phenomena of hysteria or of the neuroses or psychoses to untrained and often ignorant men without using the terms which have grown up about and form an essential part of the subject. The situation is an impossible one. What happens? The expert doesn't explain. He leaves often a wholly wrong impression. He finds himself incapable of expressing his real opinion, what with the badgering of the lawyers and the restrictions put upon him by the court. Occasions will occur to many of you in which you have left a false impression because of this limitation of your means of expression. I remember on one occasion being called to account for the use of so commonplace a word as "exacerbation." Again I recall a long and fruitless discussion between the cross-examining attorney and myself on the use of the word "neurosis," which the attorney insisted upon defining, apparently to suit his ends, in a wholly inaccurate way, to which I was unable to agree. Under ordinary conditions much of the medical expert testimony is wholly meaningless, and the verdict is determined by the saving grace of ordinary common sense.

III. The attitude of the attorneys, whether for the prosecution or the defence, in relation to the medical expert witness is quite different. The attorney's object is to win his case by the use of all legitimate methods as allowed by the presiding judge. He regards the witness as legitimate prey, whether for or against him. His aim naturally is to bring out the points which favor his contention and to minimize to the last degree the other side of the question. To this end he resorts to methods which place the expert witness wholly at a disadvantage in that he is obliged in answer to the questions asked to exaggerate one aspect of the case, however desirous he may be to express the whole truth as he sees it. From a legal standpoint this is fair and essential to the system of expert testimony as at present constituted. The cross examination is designed to overcome this tendency to apparent bias, and it is apparently the cross examination which renders expert testimony so difficult and irksome to the ordinary physician. Every effort is made by the cross-examining attorney to disclose inconsistencies and to confuse the witness. If the witness can be placed in an absurd position, he may be summarily dropped without further effort to get at his real opinions, naturally leaving a wholly false impression on the untutored minds of the jurymen and placing the witness in the humiliating position which his knowledge by no means justifies. Again the physician finds himself the victim of a system which denies him the privilege of free speech, under circumstances which may demand all his calmness and acumen. A distinguished physician once told me that he would not again testify unless he be allowed to state both sides of the question to the jury in his own language. From the standpoint of the attorneys, therefore, the witness is "used," as the legal expression is, to subserve the ends of their client regardless of the whole truth of the situation. The expert witness leaves the stand, in the great majority of cases, without having given his complete and unbiased opinion upon the question at issue. It is at best a garbled statement. This is consistent with the purpose of the attorney, whether he appears for the prosecution or for the defence. The skill and success of the trial lawyer depends in large measure upon his method of handling witnesses, and his capacity to draw from them those facts which strengthen the contention which he is defending. The physician is something of a puppet in the hands of the skilled attorney. He certainly does not stand in the independent position in relation to the issue at stake which he maintains in other professional capacities.

We are told that the distortion of statement which an attorney is usually able to draw from a witness is neutralized by the system of cross examination, and that the outcome of the state-

[1] In this connection two papers by Prof. Hugo Münsterberg which have appeared in the September and October numbers of *McClure's Magazine*, are of interest, entitled, respectively, "Nothing but the Truth," and "The Third Degree."

ments of a medical witness is thereby sifted down to fact as would be possible by no other method. This I strongly doubt. Lawyers vary widely in their capacity to cross examine, as do physicians in their capacity to answer questions put with hostile motive. The attorney who sneers at a witness, who attempts to confuse him by tricks of expression, who makes him ridiculous, who minimizes the main issue by an insistence on irrelevant details, who abuses him without reason, is well known to all of us. Worse than all this is the direct examination conducted by an attorney who is wholly ignorant of the subject about which he is asking questions. One of the most annoying positions in which an expert witness can be placed is to find no opportunity to state his case either on direct or re-direct examination because of the helpless floundering of his attorney. For these and similar reasons I do not believe in very many instances that the mature judgment of a conscientious medical witness is finally given to the jury under our present system, and the pitiable part of the situation is that each attorney is doing his best to prevent the clear presentation of such a mature judgment.[2]

IV. Leaving the discussion of the legal side of the matter, which possibly is somewhat out of our province, it will conduce to a clearer appreciation of the general subject to say something of the medical witness himself. First, the medical witness for the plaintiff: Few young practitioners who are working in special subjects, and particularly in the nervous system, fail of an opportunity to testify for the plaintiff in suits for damages which mainly fill our courts. The temptation is apparent. They are not overburdened with practice, they are glad of the experience of court procedure, they are promised liberal remuneration if the case is successful, while sharing with the lawyer the lack of money return in the event of an adverse verdict. Out of this general situation has arisen the pernicious practice of so-called contingent fees for medical expert testimony. The far-reaching evils of this almost universal practice are not fully appreciated. In the first place, it increases the number of suits for trifling injuries, because the lawyers know that men in good standing are easily to be found who will testify on a contingent basis. Secondly, it fosters the neuroses, and not infrequently, I believe, creates them by forcing through the ordeal of litigation many persons who would be spared were experts not so easily obtained. In the third place, the moment a physician places himself in a position where he has something to gain or lose by the outcome of a case he becomes in so far a partisan with all the consequences to his reputation which that implies. If all reputable physicians would refuse to testify for contingent fees, it would do away with much of the present unnecessary litigation and would be a distinct gain for the people as well as for the medical profession. The lawyers, many of them at least, are, for somewhat obvious reasons, in favor of the contingent fee. They urge their own risk in undertaking the prosecution of a case in which there is no financial backing, and I have even been a victim of the argument that purely from a charitable standpoint it was a duty to undertake cases on the basis of contingency. Time does not permit me to enter upon a discussion of the large question involved in this matter. It is sufficient for the present to express the firm conviction that the medical profession would be placed in a far better light and the litigants would be spared the development of many serious disorders, especially of a nervous character, if physicians for the plaintiff stood on the same basis of suitable reward for services rendered as do physicians who testify for the defence.

Leaving aside the question of fees, which after all is a subordinate matter, witnesses are too often regarded as allies of the attorneys, and at times, I fear, actually are. The medical witness, qualifying as an expert, is often young and inexperienced. He finds himself slipping from his supposed unbiased position, and magnifying or minimizing, as the case may be, the ills concerning which he is called upon to testify. He finds himself actually working with the attorney to bring about the discomfiture of his brother physicians who are appearing on the other side, thereby unconsciously adopting legal methods. He begins to be talked about among the lawyers as a plaintiff or a defendant man, and, rightly or wrongly, is looked upon by them, and also by his own profession, as a man whose opinion is preformed and whose testimony is known before it is expressed. There is no question that physicians are often misjudged in this matter, but do they not often expose themselves to this judgment? It must be clearly borne in mind that the legal and medical attitudes under the jury system are or should be different, and that as physicians we should guard against their ever becoming the same. We cannot be too careful in guarding against the subtle influences of gain, of prejudice, and of many conditions which under the present system tend to warp our judgment. It is wholly unfortunate that a medical expert should ever be regarded in the light of a plaintiff or a defendant witness. The present system, however, forces this distinction upon us. It is desirable that we do all in our power to minimize its evil effects.

The witness for the defence, which in the ordinary type of case is a corporation, is exposed to peculiar temptations. Here the very assurance of money return for services rendered carries with it a certain danger. If a man's mind is not quite settled on the significance of certain signs and

[2] In this connection a book by Francis L. Wellman, of the New York bar, entitled "The Art of Cross Examination," The Macmillan Company, 1904, will be found interesting, as showing the extraordinary methods resorted to by attorneys to gain their ends. The author says in one place, page 83: "The art of the cross examiner should be directed to bring out such scientific facts from the knowledge of the expert as will help his own case, and thus tend to destroy the weight of the opinion of the expert given against him"; and again, page 84, "No question should be put to an expert, which is in any way so broad as to give the expert an opportunity to expatiate upon his own views," etc. An examination of a physician, narrated on pages 94–97, is particularly illuminating, as demonstrating the impossible position in which a conscientious physican may be placed before a jury, through an unscrupulous method of cross examination. In this instance the attorney asked his questions in rhyme to the amusement of the jury and the discomfiture of the physician.

symptoms, which commonly appear in the person of the plaintiff, the influence is subtle but strong to mold his attitude toward the side of the defendant. His habit of mind changes. Plaintiffs come to be regarded as for the most part grossly self-seeking, if not absolute frauds. Corporations are long-suffering and abused. A certain lack of charity develops. Lawyers for the plaintiff no longer seek his services. All this is in one sense not blameworthy. His convictions may still be honest and his opinions well founded in reason. Nevertheless, the temptation cannot be overlooked and should not be minimized.

The natural result of the entire situation is that doctors are arrayed over against each other, as are lawyers. Partisanship almost involuntarily develops. The doctor assumes the legal attitude. He takes sides. He confers in the court room with his attorney to frame questions to confound his fellow practitioner on the witness stand, and the pitiable spectacle of medical expert testimony, which any great trial presents, is spread before us. The medical profession as represented by its experts becomes a laughing-stock. The jury disregards its statements. The press ridicules the so-called experts whose disagreements are emphasized to the last degree. Much time and money are spent in bringing out testimony so contradictory that the Court often actually instructs the jury to ignore it, and the whole farce of the present system is ingloriously exposed. We have recently seen an exhibition of this sort in a widely advertised New York trial which excited international comment and once again aroused the medical profession to the possibility of reform. The added misfortune is that precisely the same condition of affairs prevails in varying degree, depending upon the importance of the case and the emotions excited thereby, in all trials where medical witnesses appear on the two sides of the controversy. There is the same quibbling, the same tendency to cloak the main issue, in the small and apparently insignificant trial as in that to which the papers devote their most prominent space. The principle must remain the same while the present system exists.

Radical reform is at present unlikely. What can in the meantime be done quietly and unobtrusively by the medical profession? Each individual who testifies as an expert in court may at least further the cause of reform by the following means: refuse to be forced into even the appearance of partisanship. To this end refuse to testify on the contingent basis; decline to prompt lawyers in the court room; maintain an inflexible determination to state the whole truth as you see it, remembering that the emphasis on a single word or the tone of voice or manner may easily and very definitely indicate bias. Do not allow the natural disadvantage of your position as an answerer of questions to influence your temper or your judgment, and, above all else, do not permit yourself to fall into the common error of testifying regarding matters of which you are ignorant.

In regard to this latter matter, it is evident that the points about which the greatest confusion exists in the court room are just those points about which the greatest confusion exists in the best minds of the profession. No definite final word has yet been said regarding the great problem underlying hysteria, the various insanities and the springs of conduct in general, and yet it is about these very facts that a medical witness is expected to state a dogmatic opinion, and too often is forced into doing so when his knowledge is as vague as the subject is vast. How many men, for example, who go on the witness stand and qualify as experts, are in the least capable of giving a succinct and clear statement of any theory of hysteria, an affection which plays so significant a rôle in many cases of litigation resulting from accident? How many men understand the significance of somnambulism, the manifold alterations of personality, on the subtle interaction between mind and body which occur in this protean neurosis? What justification have men whose lives have been devoted, let us say, to surgery, or departments of medicine remote from the nervous system, to express an opinion to the jury which in the eyes of the Court has equal weight with that of a person who has devoted his life to a study of these subtle questions? The whole matter is naturally involved in difficulties. Our knowledge at best is imperfect and often incapable of dogmatic statement, but the general plan of action is easily evolved from the chaos, and that is that no physician should testify as an expert in a matter before the Court on a subject in which he himself is not conscious of expert knowledge. The jury, the judge and the lawyers cannot be conscious of his qualifications as he is himself. For the furtherance of the best in expert testimony we must increasingly demand of ourselves that we will testify as experts only in those matters in which we have special knowledge.[3] A physician is or should be no longer called upon to give an expert surgical opinion in a court of law, nor should a surgeon regard himself as competent to give an opinion on some subtle matter relating, for example, to the nervous system under the cloak of a somewhat universal ignorance of the subject. We are not now speaking of that minority in the profession whose ignorance is notorious and whose continual appearance in court can be explained on no other basis than that of the desire for gain. This class of physicians, harmful as it is, is a somewhat negligible quantity. We refer rather to conscientious and in general well informed physicians who are disinclined to make sharp distinctions between ordinary and expert knowledge. We cannot expect the courts or the legal profession to help us materially in this

[3] The following position, for example, quoted in the *British Medical Journal* for Aug. 31, 1907, would be difficult to maintain under a rigid cross examination: "Dr. R. T. Williams gave evidence lately at Marylebone Police Court in a case in which a woman charged with being drunk and incapable denied the insinuation. Dr. Williams said that he found her in a 'mellow, comfortable state of drunkenness, recovering from irritation,' and in reply to an inquiry from the magistrate said that he distinguished practically seven stages of drunkenness: Irritable, mellow, pugnacious, affectionate, lachrymose, followed, if the total doses were large enough, by collapse and death. Mr. Plowden seemed much pleased with the classification, and said that it was a most instructive lesson of which his court stood much in need."

matter. It, therefore, becomes necessary that we should with increasing care scrutinize our own motives and diligently refuse to expose ourselves to the possibility of misinterpretation. To this end we must, as I have suggested above, testify only in those cases in which we are assured that our knowledge is such that we may legitimately qualify as experts.

Necessary as it is to do our utmost to elevate the character of expert testimony under the present conditions, efforts should not be spared to bring about a fairer relation between physicians and the courts in the future. Individual instances are multiplying in which to the satisfaction of all concerned commissions of experts have been appointed whose duty it is to report immediately to the Court. Many cases of the highest moment have been adjudicated on this basis during the past few years, and there is no question that many others will follow. By such an arrangement the physician appears at his best. He is selected after due deliberation by responsible and unprejudiced persons. He is allowed ample time for examinations, for mature deliberation on the results of his findings and for the preparation of his report. He is freed from the petty annoyances of an appearance in court, and from the possible disastrous expression of an opinion which he would not have made under other circumstances. The ideal toward which the medical profession must strive in this matter of medical expert testimony is that of an appointment by a central authority, of physicians to sit in judgment upon the medical aspects of the case presented. No doubt such a system, if universally adopted, would have certain objections and would possibly run counter to the general method of court procedure, as exemplified in trial by jury. The fact, however, remains that the present system is unsatisfactory as well to the legal as to the medical profession, and that the medical profession is placed in an invidious light thereby which it should strive by all legitimate means in its power to obviate and overcome.

Clinical Department.

TUBERCULOUS ULCER OF THE ILEUM. PERFORATION. GENERAL PERITONITIS. OPERATION. DEATH.

BY THOMAS F. LEEN, M.D., BOSTON,
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AND
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Surgeon to the Carney Hospital.

A GENERAL peritonitis, resulting from the perforation of a tuberculous ulcer of the intestine, is sufficiently uncommon to warrant the publication of the following case. In proportion to the frequency of tuberculous intestinal ulcer, its perforation into the free peritoneal cavity may even be called rare rather than uncommon. The pathology of the affection would lead us to expect this. For the ulceration usually extends in a direction transverse to the long axis of the bowel. As far as the serous covering of the intestine is concerned the seat of the ulcer is commonly indicated by a local redness, a thickening and by the presence of small nodules; in other words, by a localized tuberculous inflammation of the peritoneum which favors the formation of adhesions between the affected locality and contiguous loops of intestine or between it and neighboring structures. It can readily be seen how this adhesion-formation, this agglutinating process, usually prevents the perforation of the ulcer into the free peritoneal cavity and favors the formation of a localized abscess, should perforation occur. Perforation of the lower rectum by a tuberculous ulcer is not uncommon, but with that fact we are not particularly concerned here.

The patient, an unmarried male of thirty-five, was seen by Dr. Leen in his private practice on the morning of May 18, 1907. For the past seven or eight years he has complained of a chronic cough with thick, yellow expectoration. In December, 1905, began a severe illness of three months' duration. The chief symptoms were dyspnea, ascites, edema of the legs, rapid emaciation and diarrhea with tenesmus. Recovery was slow and the illness was followed for some months by constipation which was rather intractable. Late in the spring of 1906, he had an attack of severe abdominal pain with vomiting but without symptoms of obstruction; he was confined to his bed for three days. Since then he has had five such attacks. For the past two years "bleeding piles" have been a source of great discomfort to him. Though his appetite has been poor, his weight has shown a gradual increase, his condition a constant betterment, and for the two weeks just previous to his final illness he considered himself perfectly well; his bowels were moving twice daily.

At 11 P.M., May 17, 1907, just as he arrived home from an all-day trip to Connecticut, he was seized with a dull abdominal pain, which made itself felt at first to the left of the umbilicus; it gradually worked over into the right lower quadrant, shooting down into the right testicle, but finally became pretty well localized in the left lower quadrant; it soon became severe and later agonizing; the patient felt feverish and was sleepless.

On the morning of the 18th Dr. Leen was called. The prone position of the patient, the flexed lower extremities and the anxious face plainly indicated suffering. The pulse, of small volume but fair tension, was 120; the temperature, 101.4° and the respiration, 18. The sclera of each eye was slightly icteric; the tongue was moist and coated and the heart, slightly enlarged to the left, showed a systolic murmur, mitral in origin. Examination of the lungs disclosed nothing abnormal. The moderately distended abdomen was very tender over a rather indefinite area of dullness in the left lower quadrant; the very lightest percussion there caused pain. Muscular spasm, though present over the whole anterior abdominal wall, was most marked over the tender area. The area of the liver dullness was slightly decreased; the spleen was not enlarged. By rectum there could be felt close to the left obturator foramen a tender, fixed, boggy mass of the size and shape of a Tangerine orange, halved in its long diameter. The urine had a specific gravity of 1,020, showed a slight trace of albumin and in the sediment were a few hyaline and granular casts. The patient's bowels had moved on the morning of the 17th but not since. Cathartics and enemata were used without avail. Surgical consultation was refused by the patient. By afternoon the distention had increased and the pulse had grown weaker; nausea was constant but there was

no vomiting. Dr. Sawin saw the patient in consultation with Dr. Leen. A provisional diagnosis of intestinal obstruction due to obturator hernia was made and immediate operation advised. The patient refused consent.

During the night of the 18th the patient's condition grew steadily worse; vomiting began; the pulse increased in rate and lost in strength. On the morning of the 19th the mass, previously felt by rectum, had disappeared and the whole pelvis seemed to be full of loaded intestines. With the hope that the obstruction had relieved itself cathartics were again tried but without avail. The patient failed rapidly, but it was not until 7 P.M. that he would consent to be removed to the Carney Hospital for operation.

He was then almost moribund. His temperature was 97°, his pulse 140 and his respirations were rapid and shallow. His face, covered with perspiration, showed the pinched, anxious expression of toxemia. His chest was negative. His abdomen showed general, symmetrical distention, general rigidity and tenderness; the latter was still most marked in the left lower quadrant where a mass could be indefinitely palpated. The whole lower abdomen was dull to percussion. Rectal examination was negative.

At the operation, done by Dr. Bottomley, a general peritonitis was found, due to a perforation of the ileum. The distance of the perforation from the ileo-cecal valve was not determined. It was about one fourth of an inch in diameter and was at the center of an indurated section of gut about three inches in length. The perforation was sutured into the partially closed operative wound in the abdominal wall. The pelvis was drained by tubes and wicks through two separate incisions. The patient was placed in the sitting position in bed and salt solution introduced into the rectum by the "seeping" method of Murphy. Death followed in about four hours.

After death the indurated section of gut was removed and sent to the Pathological Department of the Harvard Medical School. The pathological diagnosis was "Perforated tuberculous ulcer of the ileum."

Reports of Societies.

EIGHTH ANNUAL MEETING OF THE AMERICAN THERAPEUTIC SOCIETY.

HELD AT WASHINGTON, D. C., MAY 4, 6 AND 7, 1907.

THE address of welcome was delivered by Hon. HENRY B. F. MCFARLAND, president of the Board of Commissioners for the District of Columbia. DR. REYNOLD WEBB WILCOX, New York, responded for the visiting members.

Address by the president, DR. ROBERT REYBURN, Washington, D. C.

FIFTY YEARS IN THE PRACTICE OF MEDICINE.

After speaking of his early medical career, Dr. Reyburn describes the methods of treatment used in the period following the year of his graduation, 1856. Vaccination was performed by pulverizing vaccine crusts and inserting the moistened powder into the arm. The antiphlogistic method of treating inflammation was still in vogue, bleeding, blistering, purging. While no one would wish to revive bleeding after the old methods, yet he had seen cases in which prompt venesection had saved life. In eclampsia, threatened apoplexy and even acute pneumonia, he had seen prompt relief afforded in this way. The antiphlogistic method was followed by a reaction, and in 1860 and 1862, stimulants were given in inflammatory conditions. In 1862 Dr. Reyburn entered the Union Army, and from this point the paper deals largely with surgery. After describing surgical methods in vogue prior to the war, and contrasting them with those of the present day, he interestingly describes his army experiences. He contrasts the high mortality from gunshot wounds in the Civil War with the low mortality in the Spanish-American war. In the latter the universal use of first aid by antiseptic dressings did more than anything else to lessen the mortality. Also, the rifles used were more humane in that they carried a small bullet of high velocity, which penetrated the tissues more readily and caused less shattering than did those of the Civil War. The paper then deals with personal recollections of President Lincoln and of the scenes following his assassination. The address closes with an interesting account of the assassination, illness and death of President Garfield, Dr. Reyburn having been one of the physicians in attendance.

PURE DRUGS.

DR. HARVEY W. WILEY, Washington: After referring to the different classes of therapeutic agents, Dr. Wiley discusses the attempts that have been made to control the purity of drugs used as medicines. Such attempts have been made for many years. The United States Pharmacopeia, National Formulary and United States Dispensatory are efforts along this line. As early as 1848 a federal law was enacted governing the importation of adulterated and spurious medicines. Prior to this there had been established at the port of New York an examiner of drugs. His testimony before the Congressional Committee shows that the character of the drugs imported a half-century ago was far from satisfactory. At least one half of those which entered New York was adulterated or had deteriorated in value. Under the inspection of drugs their character has materially improved. Dr. Wiley was unable to say how far the new Food and Drugs Act will be applied to the inspection of drugs. The question is now before the Attorney-General for decision. If he adopts the common principle of construction, inspection by the Treasury Department will continue as before, with an additional inspection as required by the Act of June 30, 1906. It is probable that at least 20% of the drug trade will be affected by the provisions of the new law. This leaves about forty thousand articles of drugs to which the law does not apply except as to misbranding. He considers the subject of misbranding, the evils which attend the promiscuous sale of preparations of uncertain, unknown, or even questionable composition, and the beneficial effects which have followed proper and correct branding. Individuals who have not the most elementary knowledge of pharmacy or medicine are permitted, under the state and national law, to concoct almost any agent and sell it directly to the consumer. This is in marked contrast with the qualifications necessary for the practice of medicine and pharmacy. He suggests the following as the most effective method of control in this regard: that no one should be allowed to advertise or offer for sale to the public in any community any remedy of any kind who has not passed an examination before a medical examining board and received a license to dispense medicines and prescribe for patients in the locality mentioned. Thus, the patent medicine trade would be much restricted. After discussing the subject of standardization, the paper closes with an appeal to physicians to write original prescriptions rather than order the ready-made medicinal preparations.

DISCUSSION.

DR. REYNOLD WEBB WILCOX, New York, spoke of the standards set forth in the Pharmacopeia. Seven years ago he was appointed a member of the revision committee. The aim of the committee had always been to maintain the necessary efficiency and purity of drugs without making the standards so high that manufacturers could not come up to them. They were established after careful study and conferences with manufacturers. After the enactment of the new Pure Food and Drugs Act there came in a flood of protests from manufacturers, who claimed that they could not come up to certain of the standards. This necessitated a reconsideration of the subject, which resulted in revision of the standard in over four hundred instances. Never had the committee failed to lower the standard when it was conclusively shown that it was unreasonably high. He commended Dr. Wiley's work. The new law was a godsend to the physician, the pharmacist and the public.

DR. E. H. LONG, Buffalo, said that the profession could well rejoice that it had the aid of the government in the matter of drug control. He commended the suggestion by Dr. Wiley relating to a license requirement for those who wish to sell medicinal preparations. He commented upon the prevailing neglect of medical schools to furnish adequate instruction in the art of prescribing and the use of reliable and well-known remedies. Much could be done along this line to hasten the era of pure drugs.

DR. OLIVER T. OSBORNE, New Haven, said that now is the time to let the label tell. He related a recent experience at Hartford in an effort to get poison labels on bottles. There was much opposition from pharmacists and others, and finally two strenuous bills were brought before the legislature. Much to his satisfaction, however, the business men agreed at the preliminary hearing that they preferred the provisions of the new Food and Drugs Act. What can be done as to false and misleading advertisements? The Post-office Department must attend to this, as such advertisements are fraudulent and hence should be denied the use of the mails. He expressed regret that young physicians in the hospitals are prone to prescribe compounds which are kept upon the shelves ready-mixed for the sake of convenience. Thus they soon lose the ability to write their own prescriptions. After they leave the hospital they come into contact with the traveling salesman and his proprietary medicines. He made a plea for the writing of original and simple prescriptions.

DR. F. E. STEWART, East Orange, commended Dr. Wiley's work. The medical profession and the public could not be too grateful for governmental aid. He commended Dr. Wiley's suggestion as to license requirement. Dr. Gould had said that any one can practice medicine without a license except a physician or a pharmacist.

DR. L. F. KEBLER, Washington, related interesting instances in which articles which were misbranded or falsely advertised were brought to the attention of the post-office authorities with the object of having them excluded from the mails. In many instances failure was due to the difference of opinion among the medical witnesses as to the efficacy of the "cure" under consideration. He testified as to the dense ignorance of many of the promoters of these "cures" and cited instances in illustration.

DR. WILEY, in closing, said that the Post-office Department had accomplished all that it could under the law. He had always received from it sympathy and help in his work.

SOME CRITICISMS OF THE UNITED STATES PHARMACOPEIA.

DR. REYNOLD WEBB WILCOX, New York: Dr. Wilcox answers some of the criticisms that have appeared since the last revision became official in 1905:

1. "Many agents have been retained that are not in general use, while others much used have been omitted." As a matter of fact the changes were made only after the committee had consulted manufacturers, wholesale and retail druggists, and the members of the medical profession throughout the land. Every suggestion, no matter how humble its origin, was considered.

2. "More frequent revisions of the pharmacopeia are necessary." A greater frequency would not be possible, because time is needed for definite knowledge of medicinal substances. Active work for nearly five years was required for the present revision and this represents about the shortest time in which the work can be done.

3. "The time has come when the American Medical Association should take a hand in this work." Dr. Wilcox answers this criticism at some length, calling attention to the make-up of the revison committee. The medical profession is represented by 12 out of 26 members. The unfortunate showing which the Council on Pharmacy and Chemistry has made also demonstrates the utter unfitness of the American Medical Association to undertake the far more serious work of revision of the Pharmacopeia.

DISCUSSION.

DR. L. F. KEBLER, Washington, agreed with Dr. Wilcox as to the status of the United States Pharmacopeia. He knew of none equal to our own. It unquestionably has faults, but they will be remedied as fast as practicable. He could not see the justice of the criticisms mentioned in the paper. He expressed regret that Dr. Wilcox had so severely criticised the Council. It had already accomplished something, and for this it deserved credit. It could reach some things that the federal law could not. Already it had exposed a number of frauds; the members were working harmoniously together for a good end.

DR. F. E. STEWART, East Orange, also expressed regret that Dr. Wilcox had criticised the Council so severely. It was doing a good work and was attempting to solve some of the most difficult problems in existence.

DR. S. L. DAWES, Albany, referred to the nomenclature used in the Pharmacopeia. The names of remedies are in many instances too long and complex. They could be simplified to good advantage. Students who are taught long and complex names for drugs soon discard them after graduation for simpler terms. After graduation young physicians are apt to lapse from the high standards set for them in the medical schools. He thought this a valid criticism of the Pharmacopeia. Simplify the nomenclature.

DR. E. H. LONG, Buffalo, said that we should not take the position of condemning the Council. We should remember the short time that it has been in existence. Though young, it has already done some good. The Pharmacopeia, on the other hand, has been in existence since 1820. It can stand severe criticism. The more one comes into contact with the members of the revision committee, the more he sympathizes with them in their work. He was in favor of a simpler nomenclature.

DR. OLIVER T. OSBORNE, New Haven, said he hardly found his prescription blanks long enough for some of the terms he had to use. He suggested that accent marks be used in the next Pharmacopeia in order to

secure uniformity in pronunciation. He commended the work of the Council.

DR. WILCOX, in closing, said that perhaps his criticism of the Council had been rather too severe. Destructive criticism is not always advisable; constructive criticism is often productive of good. His was intended to be of the latter type. He fully appreciated the magnitude of the task before the Council. It had simply undertaken to do more than it could. He favored a simpler nomenclature, and agreed that the matter of pronunciation should receive attention in the next Pharmacopeia.

LEGAL CONTROL NECESSARY IN THE TREATMENT OF DRUG HABITS.

DR. FREDERICK H. GERRISH, Portland, Me.: After speaking of the wide prevalence of drug habits, Dr. Gerrish emphasizes the futility of depending upon the victim's will power. Physical restraint is necessary in almost every case. And yet if the physician interferes with the freedom of action of the victim, even with his consent, he makes himself liable to a subsequent suit for false imprisonment. The only way to reconcile the conflicting interests of physician and patient is by the enactment of a law by which the victim can relinquish his freedom long enough to ensure a cure. Such a law was enacted in Maine in 1905. Dr. Gerrish had heard no complaints that its workings were other than salutary. The paper closes with a statement of the law.

(To be continued.)

Book Reviews.

Morris's Human Anatomy. A Complete Systematic Treatise by English and American Authors. Edited by HENRY MORRIS, A.M. and M.B. Lond., F.R.C.S. Eng., President of the Royal College of Surgeons of England, and J. PLAYFAIR MCMURRICH, A.M., Ph.D., Professor of Anatomy, University of Michigan. In five parts. Fourth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Among the composite works on anatomy the comprehensive treatise by Morris which goes under the name of "Morris's Anatomy" takes a prominent place. So successful has this book been, not only abroad, but in this country, that this latest, fourth edition, has been in part revised and rewritten by American anatomists. This has necessitated a very complete revision, and many of the articles, notably those on the muscles, central nervous system, sense organs and the skin, have been wholly rewritten. The complete list of contributors to this edition is as follows: Henry Morris, F.R.C.S., London; R. J. Terry, Washington University, St. Louis; Peter Thompson, King's College, London; Irving Hardesty, University of California; G. Carl Huber, University of Michigan; J. Playfair McMurrich, University of Michigan; Abram T. Kerr, Cornell University; Charles R. Bardeen, University of Wisconsin; Florence R. Sabin, Johns Hopkins University; R. Marcus Gunn, F.R.C.S., London; and W.H. A. Jacobson, F.R.C.S., Guy's Hospital, London.

The illustrations have been changed. Some have been excluded or dropped from this edition and others added. The book at present contains 1,025 illustrations, 319 of which are printed in colors. A notable feature of the book is the adoption of the Basle nomenclature in its entirety. This is the first anatomical textbook in English which has gone so far as this in reformed terminology, and it will no doubt do its part toward making universal a nomenclature which probably the best interests of the anatomical sciences demand. A notable feature of this fourth edition is that it may now be had in five parts, books naturally of varying size but all convenient to handle. These parts are arranged as follows: Part I, morphogeny, osteology, articulations; Part II, muscles, circulation and lymphatics; Part III, nervous system and organs of sense; Part IV, digestion, respirative and reproductive organs, ductless glands, and skin; Part V, surgical and topographical considerations. The advisability of dividing into volumes what is otherwise a ponderous book is not to be questioned. It furthermore makes possible the purchase of a single part by students of special subjects. The book may, however, still be had by those who prefer, in its original one volume form. The arrangement, printing and general form leave nothing to be desired from the point of view of the bookmaker's art. We can most cordially, as we have its predecessors, commend this new edition to the attention of anatomists, particularly surgeons, and others interested in the anatomical sciences.

The Climatic Treatment of Children. By FREDERICK L. WACHENHEIM, M.D., Chief of Clinic, Children's Department, Mount Sinai Hospital Dispensary, New York. Pp. 400. New York: Rebman Company. 1907.

This work certainly goes a long way to fill the vacant place in medical literature for which the author states it is intended, that is, the climatotherapy of early life. He first takes up the general principles of climatology and then that of temperate North America. He describes the various health resorts, both here and abroad, in more or less detail, not only as to their climate but also as to their sanitary and sociologic conditions. Much attention is given to the climatic management of the normal child. We especially recommend a perusal of his remarks on "hardening" to those vain and foolish mothers and more foolish physicians who advise bare necks and uncovered extremities during our northern winters. The book closes with chapters on the climatic treatment of constitutional and visceral diseases, scrofulosis and tuberculosis, and also contains a number of valuable charts. It is well worthy of careful reading, and cannot fail to be of assistance to every practitioner.

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THE DEVELOPMENT OF THE WORK OF THE MASSACHUSETTS STATE BOARD OF HEALTH.

At the second quarterly meeting of the Worcester North District Medical Society, held in Fitchburg, Oct. 22, 1907, Dr. William C. Hanson, assistant to the secretary of the Massachusetts State Board of Health, presented a paper on Some Phases in the History, Development and Present Work of the Massachusetts State Board of Health. In this paper mention was first made of a remarkable document written by Lemuel Shattuck, and presented to the Massachusetts Legislature of 1850, with special reference to the following suggestions and recommendations contained therein:

(1) That "one of the most valuable reforms which could be introduced into the present constitution of society would be that the advice of the physician should be sought for and *paid for* while in health to keep the patient well."

(2) That "a general central board of health be established."

(3) That there be "far more efficient local boards of health."

(4) That there be "some intermediary between the central board of health and the local boards."

(5) And, finally, that the "cause of consumption and the circumstances under which it occurs be made the subject of particular observation and investigation," on the ground that "if consumption is ever to be eradicated or ameliorated, it can only be done by preventive means and not by cure."

Attention was called to the fact that the first meeting of the State Board of Health of Massachusetts, the first state board of health in this country, was held at the State House on Sept. 15, 1869.

A portion of the first communication of the State Board of Health to the boards of health of the various cities and towns of the Commonwealth was read, and many subjects of inquiry on the part of the board during the first two years of its existence were commented on, especially those relating to the cause of typhoid fever, and to the health of minors in factories. It was pointed out that in spite of the report of the State Board of Health of 1871, of the advisability of considering further the health of minors employed in factories, and notwithstanding the facts gathered and published in that notable report of 1850, relative to the causes of consumption and the inference drawn that "if the mortality produced by this disease is ever to be lessened, it is to be effected by preventive means," it remained for the Legislature of 1907 to pass an act providing for a better care of minors working in manufacturing establishments, and for the prevention of the spread of tuberculosis.

It was further pointed out that the recommendation of Lemuel Shattuck for the appointment of some intermediary between the State Board of Health and the local boards was provided by this same Legislature of 1907, by requiring the establishment of health districts and the appointment of state inspectors of health.

Brief mention was made of the first law relating to the sale of food and drugs, in 1882; of the enactment of the patent medicine law of 1906, emphasizing the section relative to the sale of proprietary preparations containing cocaine, and of the efficient enforcement of these laws by the State Board of Health. Attention was called to a communication recently issued by Governor Guild, that "the State Board of Health, with the full approval of the Governor, is now visiting chief dairies of neighboring states, and examining the premises; that the lack of uniform legislation between the states on this subject is laying an unfair burden on the State Board of Health of Massachusetts, which is compelled to act as a board of health, as far as herds from which milk sold in Massachusetts is concerned, not merely for this Commonwealth, but for several other states in addition."

The act relative to the general oversight and care of the purity of inland waters by the State Board of Health was referred to, as well as the work of the board, as to advising the author-

ities of cities and towns, corporations, firms and individuals, regarding existing or proposed systems of water supply and sewage.

Emphasis was laid upon the fact that Massachusetts was the first state in the Union to provide for the distribution of diphtheria antitoxin to anybody who needed it, whether rich or poor, and a statement was made to show that through the widespread distribution of antitoxin by the State Board of Health, the mean fatality during the antitoxin period, 1895–1905, was 12.4% ratio of deaths to cases, or less than half as much as during the three years preceding 1895 in the pre-antitoxin period, which was 28.3%.

It is interesting to observe that after the lapse of upwards of half a century the same questions have again arisen for the consideration of the State Board of Health as those which Lemuel Shattuck clearly brought to attention in 1850. It is, perhaps, less a subject for congratulation that definite legislative action has been postponed to so late a date. Lemuel Shattuck's attainments have not been regarded at their just worth, and we therefore, at this time, are glad to call attention to his pioneer work in matters of importance to the public health and welfare.

INTERCHANGE OF MEDICAL TEACHERS.

THE facilities of travel have so greatly increased during the past few years and medical men are coming to know so much more of the work of others in their own and other countries, that a definite interchange of teachers in our medical schools might easily be arranged. As is generally known, such an interchange has for some years been in practice between certain American, German and French universities in other departments than medicine with results which certainly justify a continuance of the practice and its further development. There is no sufficient reason why a similar interchange of teachers should not take place between medical schools of this and foreign countries. In fact, a beginning has already been made through such a course of lectures as that given by Prof. Pierre Janet, of Paris, a year ago at the Harvard Medical School, on Hysteria.

Many men in the medical profession are devoting much of their time to teaching and to investigation to the exclusion of practice. Others are apparently finding more and more time to give to the less practical affairs of their work, so that there certainly would be no difficulty in arranging for courses of lectures by men eminent in the medical sciences to be given at other than their own universities. The advantages of such an interchange are manifest. It has always happened, and will continue to do so in the future, that certain medical schools are for a longer or shorter period pre-eminent in one or several branches of medicine, depending upon the men who at any given time are actively engaged in special investigations. It is altogether fitting that the results of such investigations should be presented to as large and varied audiences as possible. It is, furthermore, not to be questioned that many of these men would be glad to make the small personal sacrifice required in traveling to another city and there delivering a course of lectures to its medical students and others who might be interested.

If such a plan were inaugurated, the lectures given should be primarily addressed to students of medicine, rather than to those already in practice. There is no more appreciative audience than a body of intelligent young men who have their ways in the world still to make, whose minds are receptive and who are eager for knowledge. Lectures, therefore, given at the medical schools by the best and most productive men of other cities could not fail to elicit enthusiasm from the student body and be of wide profit in the dissemination of recently acquired knowledge. Nor is there any reason why such a system might not be extended to English and continental universities and courses of lectures on medical subjects arranged on the same general basis as those already existing in the academic departments of several of our colleges.

Perhaps the greatest difficulty in arranging such courses for students is that of finding available time in the already overcrowded curriculum. It might necessitate giving up certain lectures or exercises already prescribed, but the ultimate benefit would, in our opinion, far counterbalance the slight disadvantage arising from a temporary interruption of a set course of instruction. In the rapidly advancing art of surgery, for example, there is ample opportunity for such an interchange of teachers as we have suggested. It would be well if the special surgery of the nervous system could be presented by a man whose time is largely given to that difficult branch. It is not to be doubted that a course of lectures from Sir Victor Horsley would do much toward exciting an interest in this subject, which is too likely to wane in schools where neurological surgery has not yet been adequately recognized.

The same is, of course, true of almost any subject in the range of the medical sciences.

It is not to be questioned that America has much reason to feel a just pride in the development of the teaching of medicine. The opportunity is certainly offered of becoming a pioneer in this further extension of its scope. Constituted as our American universities are, it is impossible for students, until the completion of their course, to learn of the methods of other schools and teachers, unless a plan of interchange is arranged. Naturally, this situation does not arise in the German universities, in which the student goes from university to university, and thereby has an exceptional opportunity of sitting under many great teachers. We look forward with confidence to a systematic plan of interchange, beginning possibly in a small way, but developing into a recognized and definite part of the medical curriculum.

AN ABUSE UNDER THE PURE FOOD LAW.

The secretary of the Massachusetts State Board of Health, in an address at the Harvard Medical School, Feb. 3, 1907, made the statement that "much power for good or for evil has been placed in the hands of the national pure food commission," and that "large powers have been delegated to practically one man in the nature of fixing standards and making regulations."

Leaving aside the many incongruous conditions and possibilities which might be cited as arising from the passage of the national pure food law, there is one regulation which is so abused that the harm to which it gives rise is destined easily to offset the good ensuing therefrom. One of the sections of the act provides for a guaranty, which is, in effect, an agreement by the manufacturer, packer, wholesaler or jobber, that he will hold himself responsible for the goods furnished by him to dealers. When a guaranty is filed with the Secretary of Agriculture, the package containing the goods bears the statement, "Guaranteed under the Food and Drugs Act, June 30, 1906. Serial No. ——."

In the Food Fair, now being held in Boston, is a booth arranged for the purpose of advertising a preparation known as "Celero," or "a headache lozenge." While the envelopes used for the distribution of the lozenges bear a statement that each lozenge contains two grains of acetanilid, the assertion is also made that the lozenge is a safe and convenient remedy for all forms of headache and neuralgia. Following this statement are the words, "Guaranteed under the Pure Food and Drugs Act, June 30, 1906," which are followed immediately, in a much larger sized and far more conspicuous type, by the words, "Eat it like candy — no water needed." Many of the lozenges are kept in bulk, on the counter, in a large, uncovered glass dish, such as is used by confectioners for candies, and in several instances, in the course of a few moments' observation, a small handful of the tablets was taken by the person in charge of the booth, and given to persons coming to the booth, with such remarks as the following: "The only harmless preparation on the market; nothing injurious about it whatever; will positively cure your headache." In one instance the saleswoman was observed to put a lozenge in the mouth of a young person, as if it were candy. In another instance a young girl came to the booth, saying, "Girlie, my little girl has got a headache; give me some of them." A small handful was put into an envelope and given to this girl. At another time a boy, who appeared to be about sixteen years of age, was in charge of the booth, giving away the lozenges in the same free and indiscriminate manner.

Large sized advertisements are posted on the booth, emphasizing the fact that these lozenges may be "eaten like candy." In a circular, which is sent out with the lozenges, directions are given to "Eat the lozenge like candy, at any time, before and after meals, in any place or under any conditions." The phrase, "Eaten like candy," is repeated in a conspicuous and heavy type.

MEDICAL NOTES.

Plague. — Up to Oct. 26, seventy-six verified cases of bubonic plague have occurred in San Francisco, with forty-eight deaths. Several suspicious cases have also appeared in Seattle, and one unquestioned case. The Marine-Hospital Service is taking charge of the situation, as in San Francisco.

Pilgrimages from Egypt. — According to the *British Medical Journal*, the annual pilgrimages from Egypt are ever a source of trouble and anxiety to the Egyptian Government, for such collections of the dirtiest and most insanitary people afford many occasions for epidemics of cholera, plague and other diseases to flourish. Several reports published under the auspices of the Conseil Sanitaire, Maritime, et Quarantenaire d'Egypte, for 1907, deal with the health of those assemblages. Fortunately plague and cholera appear to have been absent, but other diseases carried off their annual quota.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Oct. 30, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 67, scarlatina 44, typhoid fever 16, measles 4, tuberculosis 61, smallpox 0.

The death-rate of the reported deaths for the week ending Oct. 30, 1907, was 21.05.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 26, 1907, was 192, against 204 the corresponding week of last year, showing a decrease of 12 deaths and making the death-rate for the week 16.43. Of this number 109 were males and 83 were females; 190 were white and 2 colored; 117 were born in the United States, 66 in foreign countries and 9 unknown; 43 were of American parentage, 119 of foreign parentage and 30 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 6 deaths; scarlatina, 33 cases and 0 deaths; typhoid fever, 22 cases and 0 deaths; measles, 8 cases and 0 deaths; tuberculosis, 50 cases and 15 deaths; smallpox, 0 case and 0 deaths. The deaths from pneumonia were 13, whooping cough 0, heart disease 30, bronchitis 4 and marasmus 5. There were 18 deaths from violent causes. The number of children who died under one year was 36; the number under five years, 48. The number of persons who died over sixty years of age was 47. The deaths in public institutions were 64.

There were 1 case and 0 deaths reported from cerebrospinal meningitis during the week.

DIPHTHERIA. — It is reported that the public schools of Rockland, a town near Brockton, Mass., have been closed because of an outbreak of diphtheria.

BEQUEST TO HOSPITAL. — By the will of Mrs. Susan E. Hoyt, a fund which will eventually amount to $20,000 has been left to the Stamford, Conn., Hospital, to provide free beds.

OPENING OF THE CHANNING HOME, BOSTON. — The Channing Home for Chronic Tuberculous Women on the corner of Bellevue and Francis streets, Boston, was formally opened on the afternoon of Thursday, Oct. 31.

NEW ENGLAND PHYSICIANS' CLUB — A club to be known as the New England Physicians Club, to be composed largely of physicians and dentists, has been incorporated in Massachusetts. It has secured for a clubhouse a desirable building on Boylston street. The president is Dr. P. J. Kingsley, and the secretary, Dr. William R. Brown.

SCHOOL HYGIENE. — At the annual meeting of the Massachusetts Schoolmasters Club, held Oct. 26, Dr. Thomas F. Harrington, Dr. Robert W. Lovett, both of Boston, and Dr. John J. Cronin, of New York, assistant chief of Medical Inspection of the Department of Health, made addresses. Dr. Harrington drew attention to the fact that there is no such thing as a system of hygiene, but that it is peculiarly personal and local in its applications.

NEW YORK.

COMMENCEMENT EXERCISES. — The thirty-second annual commencement of the New York City Training School for Nurses, on Blackwell's Island, was held on Oct. 19. There were thirty-three graduates, and Dr. Edward Sprague Peck, head of the medical board of the City Hospital, presided at the exercises.

MEDICAL DIRECTORY. — The Medical Directory of New York, New Jersey and Connecticut for 1907, just issued by the Medical Society of the State of New York, contains the names of 15,775 registered physicians, of whom 12,168 are in New York State, 2,317 in New Jersey, and 1,292 in Connecticut. Four thousand three hundred and seventy-six are credited to the Boroughs of Manhattan and the Bronx, 1,589 to Brooklyn, 129 to Queens, and 62 to Richmond, a total for the City of New York of 6,156 (as against 6,034 last year); while the physicians residing in the rest of the state number 6,012.

STREET CLEANING. — A public meeting was held on Oct. 18, under the auspices of the East Side Physician's Association, to discuss "The Street Cleaning Department in Relation to the Health of the City." Dr. Robert Abrahams, president of the association, presided, and the principal speaker was Dr. Walter Bensel of the Health Department, who for the past three months has done admirable service as acting Commissioner of Street Cleaning. Dr. Bensel told of some of the difficulties which the department had to contend with and of proposed plans for more efficient work, and concluded by saying that there was no question but what the people of New York could have clean streets if they would spend the necessary money.

WAS NOT HYDROPHOBIA. — Dr. Charles W. Dulles, of Philadelphia, recently noticed in a

newspaper an item to the effect that a dogcatcher, after being bitten in the course of his career by more than 250 dogs, was dying of hydrophobia at St. John's Hospital, Yonkers. He made an investigation of the case, and has sent a letter to one of the New York papers in which he gives the following account of it: "This interesting narrative, if true, would have furnished me with the second case only in this country charged to so-called hydrophobia that I have found in twenty-five years, of any dog catcher, keeper of a public pound, or manager or worker in a public or private kennel — that is, in the class of persons most bitten by sick, vicious and so called mad dogs. So I followed my custom and wrote at once to the chief resident physician of St. John's Hospital for the facts of the case. His reply is conclusive. 'Isaiah Lee did not have hydrophobia. The diagnosis was cerebrospinal meningitis. Newspaper account was incorrect. He died this afternoon.'"

Opening of New Jersey Sanitarium for Tuberculosis. — On Oct. 24, Governor Stokes formally opened the New Jersey Sanitarium for Tuberculosis, at Glen Gardner, Hunterdon County, in the presence of a number of prominent persons, including state officials and members of the legislature. The building is 107 by 85 feet and two stories high, and will accommodate somewhat over one hundred patients.

Elevation of Standard at Cornell University. — In his annual report to the trustees of Cornell University, made public at Ithaca, on Oct. 25, President Schurman recommends plans for the elevation of the standard of education in all the departments of the university. For entrance to the medical department, he would require the degree of Bachelor of Arts and also satisfactory evidence of the student's having pursued special courses in physics, chemistry and biology.

Cross River Dam Completed. — The last stone in the completed Cross River Dam at Katonah, Westchester County, was laid by President John F. Cowan, of the Aqueduct Commission, on Oct. 26, the exercises being participated in by various city officials, the members of the different water supply commissions, and the engineers under whose direction the rapid completion of the work had been accomplished. It is estimated that this new large dam, by the additional resources from the Croton system, which it renders available, will increase the city's water supply to such an extent as will suffice until the completion of the great Ashokan reservoir in the Catskill Mountains.

Two New Hospitals. — Commissioner of Charities Hebbard has just awarded contracts for two new hospitals, one at Coney Island and the other on Staten Island, Borough of Richmond. The Coney Island hospital, which will be the first city hospital to be erected in Brooklyn for thirty years, is to be a building of reinforced concrete, four stories in height, and to cost $283,475. It will be used for acute and general medical and surgical cases. The Staten Island hospital is to consist, when completed, of eight buildings, for which an appropriation of $2,000,000 has been made. The present contract is for six of these buildings. The institution, which will be known as Sea View Hospital, is to be located at Spring Valley, Manor Road, on an eminence overlooking the lower bay. The pavilions will be four stories in height and of reinforced concrete, and the completed hospital is designed to accommodate 800 patients. The altitude of the location and its proximity to the sea will, it is believed, make the hospital of special value for convalescents.

Examination by Teachers of Sight and Hearing of School Children. — The State Department of Health has just made a new departure in sending to each of the 446 incorporated villages in the State a "complete set of forms with instructions" for the examination by the teachers of the sight and hearing of all children in the public schools of these villages. The wisdom of this proceeding would seem to be very problematical, for, notwithstanding the completeness of the forms and instructions, it is scarcely to be doubted that many defects of vision which, if left untreated, may be attended by very serious consequences are likely to be overlooked by the examining teachers. As one observer has very well remarked, "The action of the department at least indicates that some appreciation of the importance of eyestrain in its relations to the efficiency and character of children has at last made its way into the official mind, and for that reason it is a cause for hearty congratulation; but we would like to know just what the teachers are expected to do, and whether the children found to have defective vision are to be sent to oculists for treatment or to opticians for maltreatment."

Verdict against Physicians. — In the first suit of the kind said to have ever been tried in the State of New York, Mrs. Ellen E. Kenyon-

Warner, a writer, recently secured a verdict in the Supreme Court for $25,000 damages from Drs. Flavius Packer and Sidney D. Wilgus, of New York, on the charge of having improperly adjudged her insane and caused her commitment to the State Hospital at Middletown. The plaintiff's claim was for $50,000, and the case was tried at New City, the county seat of Rockland County, before Justice Morschhauser, who in his charge to the jury stated that the principal question involved was whether the physicians had exercised due care in their examination of the patient. For the defense appeared such well-known alienists as Dr. Charles W. Pilgrim, superintendent of the Hudson River State Hospital for the Insane at Poughkeepsie, and Drs. Charles L. Dana and Bernard Sachs, of New York. Dr. Dana was obliged to leave before finishing his evidence, but subscribed to the entire testimony of his colleagues. Drs. Pilgrim and Sachs, in answer to a hypothetical question, embodying the points for the defense as brought out in the testimony, expressed the opinion that a person performing the acts alleged must be of unsound mind. On cross examination, however, they admitted that some of the things mentioned did not of themselves establish insanity.

Sanitation in South America. — Dr. Louis L. Seaman, of New York, who has just returned from a five months' tour of South America, states that he was greatly impressed with the campaign of sanitation which is being carried on in the principal cities of the republics there; a campaign that is destined, he believes, to make the harbors of South America as disease-proof as any in the world, and which will insure for those countries a leading place among the nations of the earth. The great problem with them, he says, has been that of health, and the way they are solving it is an object lesson to the whole world. Rio Janeiro, a city whose harbor was one of the world's black spots, from a health standpoint, a few years ago, is now as safe as any on the globe, and this is entirely due to the admirable sanitary administration, under the direction of Dr. Oswaldo Cruz, the Health Superintendent, now in operation there. The same is measurably true, also, of the various other harbors and large cities of South America. There is hardly a city of importance on the seaboard which has not had bubonic plague to deal with from time to time, and this disease has now been thoroughly mastered. In Rio there is a reward of five cents for every rat killed, and to secure this it is necessary to send the dead animals, ticketed with the street and number of the houses from which they came, to certain specified depots. From thence they are immediately taken to Dr. Cruz's laboratory, and whenever a rat shows evidences of the plague, a health squad, organized like an American fire company, hurries to the house in which it was killed, and, irrespective of the character or ownership of the place, tears down the ceilings and thoroughly disinfects the place.

The Mosquito as a Sanitary Problem. — The Wesley M. Carpenter lecture at the New York Academy of Medicine was delivered on Oct. 17 by Dr. Edward A. Ayres, of New York, and Monmouth Beach, N. J., whose subject was "The Mosquito as a Sanitary Problem." In the course of it he declared that the mosquito had destroyed more human beings than are living in the world to-day, and that in addition to being the agent responsible for malaria and yellow fever, it was probable that it stood in the same causative relation to beri-beri, which had cost thousands of Asiatic lives. "The mosquito," said Dr. Ayres, "has had more influence than climate in demarcating tropical from temperate zonal occupation by the races of men. A female mosquito, caught in a sudden congelation of a drop of dew, can sleep peacefully through the winter months and when the spring sun sets her free can lay four hundred hatchable eggs. One healthy, favored pair of early June mosquitoes can start a progeny that will rival the human population of the globe ere the harvest moon; yet one man with a spade can destroy more mosquitoes in an hour than mankind numbers at any one time." Having paid a tribute to the self-sacrificing medical men whose researches had proved that the mosquito was the carrier of yellow fever and other diseases, the speaker stated that he had coined a new word for the class of diseases for which the mosquito was responsible, namely, "homosquitic." The closing portion of the lecture was devoted to the matter of the extermination of mosquitoes, which Dr. Ayres declared was feasible, economical and less difficult than was generally supposed; and he gave a number of examples of the effective work done in New Jersey in draining thousands of acres of marsh land which from time immemorial had been the favorite haunts of the pest. The cost of swamp drainage in New Jersey, Staten Island and Long Island, he said, varied from $1.50 to $2.50 an acre, and one man could keep 75,000 feet of ditches in good condition from year to year.

Current Literature.

Medical Record.

Oct. 5, 1907.

1. Perkins, C. W. *Fibroma Molluscum and Pendent Tumor of the Breast.*
2. Gompertz, L. M. *Early Diagnosis of Gastric Cancer, with Report of a Case.*
3. Beer, E. *A Note on the Insensibility of the Human Visceral Peritoneum.*
4. Niles, R. M. *Chronic Pharyngitis.*
5. Bissell, J. B. *The Incision and Treatment of the Stump in Appendectomy.*
6. Leuf, A. H. P. *Uric Acid Symptoms (Rheumatism) and their Relief by Colchicum and the Salicylates.*
7. Barker, M. R. *What is the Function of the Gall Bladder? And Why the Folds of Heister in the Cystic Duct?*
8. *Silkman, A. *The Diagnosis of Glanders in the Human Subject from the View Point of the Veterinarian.*

8. Silkman says that glanders in the human subject is not very rare. Many cases go undiagnosticated on account of their resemblance to typhoid fever, pneumonia, or sepsis. Acute glanders runs a course of twelve to eighteen days. The subacute cases last from six to eight weeks. The Widal and glanders agglutination tests are of value in diagnosis. In the beginning the symptoms are much like those of typhoid fever, with a high and very irregular and uncontrollable temperature. Next the symptoms of pneumonia develop. Then come articular symptoms resembling rheumatism. Abscesses now form which are not relieved by evacuation. Three or four days before death pustules appear on face, neck and shoulders, which rupture and leave rough, uneven ulcerations. The lymphatic glands are often involved. Illustrative cases are given.

New York Medical Journal.

Oct. 5, 1907.

1. Gordon, A. *Morbid Impulses and Their Medico-legal Importance.*
2. *Hutchinson, W. *Varieties of Tuberculosis according to Race and Social Condition.*
3. Barrett, C. W. *Incarceration of the Retrodisplaced Gravid Uterus.*
4. Ballin, M. J. *Intratympanic Operations under Local Anesthesia.*
5. Hutchins, M. B. *Adhesive Plaster for the Cure of Certain External Diseases and Lesions.*
6. Kakels, M. S. *Hypertrophic Wandering Spleen, with Torsion of the Pedicle.*
7. Jennings, W. B. *Congenital Syphilis.*
8. Garratt, J. M. *The Treatment of Tuberculous Cystitis.*

2. Under this very broad heading the writer discusses the relative death-rate from tuberculosis among the American Indians, the Japanese and Chinese in America, and the native whites. He does not mention the negro. The Sioux Indians, who are the flower of the Indian tribes, living in a healthful climate, well fed and comfortably housed, show a death-rate from tuberculosis of more than fifteen times that of the whites. The death-rate from tuberculosis of the Japanese in America is approximately that of the surrounding whites. That of the Chinese is almost double that of the whites, due probably to their extremely unsanitary surroundings. The writer finds an analogy to tuberculosis among the Indians in the frightful susceptibility of the aborigines the world over to the infectious diseases of civilization. The Indians have derived their tubercle bacilli from the white men, hence they are of the same strain. Yet working in the virgin soil of the American Indians, the same tubercle bacilli produce a rather different and much more virulent disease. Among the Indians the average duration of the entire disease is only four to six months. [R. I. L.]

The Journal of the American Medical Association.

Oct. 5, 1907.

1. *Beebe, S. P. *The Physiology of the Thyroid Gland in Its Relation to Exophthalmic Goiter.*
2. *MacCallum, W. G. *The Pathology of Exophthalmic Goiter.*
3. McCormack, J. N. *What Should Be the Relations of Pharmacists and Physicians.*
4. Goelet, A. H. *Examination of the Gynecologic Patient for Diagnosis.*
5. Weir, R. F. *Trigger Finger.*
6. *Miles, A. B. *Spontaneous Arterial Degeneration in Rabbits.*
7. McFarland, J. *The Nephelometer: An Instrument for Estimating the Number of Bacteria in Suspensions Used for Calculating the Opsonic Index and for Vaccines.*
8. McFarland, J., and L'Engle, E. M. *The Specific Nature of Opsonins.*
9. Senn, N. *Travel Notes from South America.*

1. Beebe finds a dearth of accurate knowledge of the physiology of the thyroid gland. He considers the thyroid apparatus as one of the vital viscera. This apparatus consists of two well differentiated structures, (1) thyroid gland, and (2) parathyroid glands. Experimental removal of the thyroid causes cachexia, alleviated by the administration of thyroid substance. Removal of the parathyroid glands causes an acute fatal tetany in a few hours to a few days. Hypodermic injection of beef parathyroid nucleo-proteid will prevent death in the acute tetany, but the animals have all died within three weeks. Chemical studies have shown that the normal thyroid gland contains little nucleo-proteid and albumin, but much globulin. This thyreoglobulin contains the iodin, and it is to this combination that thyroid extracts largely owe their activity. The normal parathyroid contains little globulin and albumin, but much nucleo-proteid. In most thyroid glands removed from cases of exophthalmic goiter chemical examination shows a marked increase in the nucleo-proteid. In simple goiter there is a relatively large amount of globulin poor in iodin. Cases with exophthalmic goiter have a much increased nitrogen metabolism and a low kreatinin output. It has been impossible to produce exophthalmic goiter experimentally, but many of the symptoms of the disease are seen when thyroid substance is given in excess. The hypersecretion theory seems most satisfactory, but there has been no explanation of the mechanism of the production of symptoms.

2. MacCallum has studied the thyroid glands removed from sixty patients, suffering from some or all of the symptoms of exophthalmic goiter. As a rule the changes in the thyroid gland are similar and apparently characteristic. The gland is usually slightly enlarged. The section surface is tougher, dryer and more granular than normal. This change may be patchy, but usually is general. Microscopically, the alveoli are no longer round and full of colloid, but are irregular and contain epithelial projections. The epithelium is columnar rather than cubical. The lumen is markedly encroached upon and there is much less colloid. The amount of colloid varies greatly, but it seems that it may bear a fairly constant relation to the stage of the disease, and that while the presence of quite abundant colloid is not inconsistent with the development of intense symptoms, yet in most cases in which the symptoms are intense, the colloid tends to disappear with the advance in the alterations in the gland. The only constant lesions found elsewhere in exophthalmic goiter are in the thymus and the lymphatic apparatus. The thymus is enlarged. Histologically it is like the thymus of early years. Not only are there masses of lymphoid tissue in the thyroid gland itself, but the lymph glands generally, especially in the neck, are enlarged. This change has the appearance of being a reaction to the absorption of some poison, but whether this material stirs up the thyroid also to proliferation, or is itself the product of the over-active thyroid it is difficult to say.

6. Much has been written on arterial degeneration after the injection of adrenalin. Rabbits have been the animals used. Miles found arterial degeneration in 27% of rabbits receiving adrenalin, and in 34% of presumably normal rabbits not receiving adrenalin. One of the presumably normal rabbits presented calcareous deposit in the aorta and typical arteriosclerotic atrophy of the kidneys. [R. I. L.]

THE JOURNAL OF EXPERIMENTAL MEDICINE.
MAY 25, 1907.

1. DUVAL, C. W. *The Experimental Vascular Lesions Produced by Bacillus Mallei.*
2. TEAGUE, O., AND BUXTON, B. H. *Electric Charges Carried by the Hemolysins.*
3. FRANK, R. T. *Results Obtained by the Injection of Placenta into Animals of the Same and of Different Species.*
4. *NOGUCHI, H. *The Nature of the Antitetanic Action of Eosin.*
5. *NOGUCHI, H. *Local Immunity and Tetanus in Inoculated Rats Treated with Eosin.*
6. MELTZER, S. J., AND LUCAS, D. R. *Physiological and Pharmacological Studies of Magnesium Salts.*
7. STOOKEY, L. B., AND MORRIS, M. *The Influence of Salicylic Acid upon Uricolysis.*
8. KRAMER, S. P. *On the Function of the Posterior Spinal Ganglia.*
9. *KRAMER, S. P. *The Pathogenesis of Gallstones.*

4 and 5. Noguchi describes experiments dealing with the influence of eosin upon the growth of the tetanus bacillus in cultures and in the tissues of inoculated animals. In cultures the presence of eosin in small proportions seemed to limit the spore formation, and in larger proportions to limit the growth of the bacillus. In inoculated animals the injection of eosin solution about the site of inoculation restricted the growth of the bacilli, and prevented development of the disease, although the bacilli remained alive and virulent to other animals. The action of the eosin injection was proved to be one of merely local immunity, since bacilli removed after a time from a site of inoculation treated with eosin and reinoculated in another part of the same animal not treated with eosin produced tetanus. Possible clinical applications of these findings are not discussed.

9. Kramer reviews the theories that have been held as to the cause of the formation of gallstones, and calls attention to the absence of experimental evidence bearing upon the action in this process of infections by typhoid and colon bacilli. He has conducted experiments which show that typhoid and colon bacilli growing in filtered and sterilized human bile and peptone bouillon solutions produce a heavy sediment containing all the constituents of gallstones. [F. W. P.]

THE LANCET.
OCT. 5, 1907.

1. POWELL, R. D. *An Address on University College and Some Points in Medical Education.*
2. EWART, W. *An Address on "Res Medica, Res Publica"; the Profession of Medicine, Its Future Work and Wage.*
3. GRABHAM, M. C. *The First Hundred Years of the Geological Society of London.*
4. EDINGTON, A., AND COUTTS, J. M. *A Note on a Recent Epidemic of Trypanosomiasis at Mauritius.*
5. DAWSON, G. W. *A Case of Acute Lupus Erythematosus.*
6. *GIFFORD, W. *Two Cases of Hyperplastic Tuberculosis of the Cecum Treated by Excision; Recovery.*
7. *TEIZO, IWAI. *Relation of Polymastia to Tuberculosis.*
8. INGRAM, P. C. P. *Three Cases of Lobar Pneumonia with Unusual Complications.*
9. ALLAN, G. A. *A Case of Primary Cancer of Left Bronchus, with Unusual Association of Pressure Symptoms; Secondary Growths in Thyroid and Lymphatic Glands.*
10. MCHATTIE, T. J. T. *A Case of Ruptured Aneurysm of the Popliteal Artery in a Man, Aged Seventy-three Years, the Subject of Chronic Lead Poisoning, Successfully Treated by Ligature of the Superficial Femoral.*

6. Gifford reports in detail two cases of hyperplastic tuberculosis of the cecum which he operated on successfully. The first case both clinically and pathologically simulated malignant disease. The second case was evidently tuberculous and led to a re-examination of the first case, which was found also to be tuberculous. He refers to the literature on the subject, and speaks of the differential diagnosis between this condition and that of cancer. The treatment is surgical.

7. Teizo, who has made an extensive investigation of polymastia among the Japanese, in this paper gives the result of his studies on the relation of polymastia to tuberculosis. He concludes, (1) that cases of polymastia are found more among the tuberculous than among the non-tuberculous. The former are nearly twice as numerous as the latter. (2) That those who have polymastia are more liable to be affected by tuberculosis than those who have not. The difference between them is more than 15%. He gives the references to all works on this subject. No explanation of this peculiar state of affairs is given. [J. B. H.]

BRITISH MEDICAL JOURNAL.
OCT. 5, 1907.

1. TOMES, C. S. *Medicine and Its Specialties in Their Relation to the State; a Retrospect and a Prospect.*
2. PETERS, O. H. *The Limited Value of Diphtheria Antitoxin as a Prophylactic.*
3. *OGILVIE, W., AND EASTON, P. G. *Two Cases of Hereditary Dystrophy.*
4. ROBERTSON, A. *The Bacteriology and Treatment of Yaws (Frambesia Tropica).*
5. *DEAN, H. P., *et al.* *Discussion on the Relative Value of Inhalation and Injection Methods of Inducing Anesthesia.*
6. BLAND-SUTTON, J. *Discussion on the Indications for Performing Cholecystectomy.*
7. MUMMERY, P. L. *Lessons of the Sigmoid Flexure as a Cause of Colitis.*
8. ANDERSON, L. G. *A Case of Sarcoma of the Small Intestine.*
9. PARDOE, J. *The Indications for Prostatectomy.*
10. FREYER, P. J. *A Further Series of Cases of Total Enucleation of the Enlarged Prostate, and a Review of 432 Operations.*
11. CHILDE, C. P. *A Case of Successful Resection of Nine and a half Feet of Small Intestine for Gangrene.*
12. TAYLOR, W. *Intestinal Obstruction.*
13. *MAYLARD, A. E. *Direction of Abdominal Incisions.*
14. BISHOP, E. S. *Mobile Kidney with a Description of a New Operation for Its Treatment..*
15. VERNON, A. H. *A New Operation for the Complete Removal of Hemorrhoids.*
16. EDINGTON, G. H. *Hygroma Colli and Branchial Fistula.*

3. Ogilvie and Easton report two cases of hereditary dystrophy of the muscles of the shoulder girdle in a father and son. The father, aged forty-five, first noticed weakness in the shoulders when he was twenty-five years old. The condition has progressed steadily ever since, unaccompanied by any symptoms whatsoever except the increasing loss of power in both shoulders, and the gradual shrinking of the muscles in the neighborhood. The son, aged twenty-five, began to notice weakness of the shoulders two years ago, coming on without any cause, and except for this slowly progressing weakness he has experienced no symptoms. In neither case was there any history of a preliminary hypertrophy.

5. Dean opens a discussion on the relative value of inhalation and injection methods of inducing anesthesia. He gives in detail the method of administering stovain in lumbar anesthesia; he advises cotton in the patient's ears and either dark glasses or a screen so that they cannot see the operation. In five cases he gives the impressions of the patients with regard to this method of anesthesia. In the discussion which followed his paper the general opinion seemed to be that at present ether or chloroform anesthesia given by an expert is by far the best.

13. Maylard gives a long and careful exposition of transverse incisions in abdominal operations, with detailed reports as to the occurrence or non-occurrence of hernia in 16 cases. He concludes: (1) That when time is not of paramount importance more permanently secure scars result from transverse than vertical incisions. (2) Transverse incisions afford more room for the treatment of pelvic

diseases and are also better for exploratory purposes. (3) Vertical incisions involve the division of fewer blood vessels and the apertures can be closed by a single series of through-and-through sutures. For these reasons, where time is a serious consideration, they should be employed. (4) In dividing the sheath of the rectus the chief end to aim at is to carry the incision as much as possible in the line of the fibers of the aponeurosis, and that wherever possible the fibers of the rectus should not be cut but should be separated — serial suturing should be employed. (5) No operation should be performed unless absolutely necessary, when the patient has a cough which it is possible to cure or alleviate. Four weeks should be allowed at least after the operation for rest in a dorsal or semi-recumbent position, and two months more before any undue strain is exercised on the wound. [J. B. H.]

THE PRACTITIONER.
OCTOBER, 1907.

1. CRAWFORD, R. *Valvular Disease of the Heart.*
2. *HOWELL, C. M. H., AND WILSON, H. W. *Movable Kidney.*
3. HAY, J. *Some Points in the Treatment of Diseases of the Heart.*
4. FISHER, T. *Some Complications of Diphtheria.*
5. *MACLENNAN, A. *The Treatment of Microbic Invasions by Bier's Hyperemia.*
6. *FLETT, A. B. *The Treatment of Some Inflammatory Conditions by Bier's Method.*
7. MCKENZIE, D. *Deviations of the Nasal Septum and the Killian Submucous Resection.*
8. LANE, J. E. *Review of Recent Literature of Syphilis and Venereal Diseases.*
9. THOMSON, H. C. *Reviews of Some Recent Work on Diseases of the Nervous System.*
10. STILL, G. F. *Recent Work in Diseases of Childhood.*
11. *BRIDGE, J. C. *Infant Mortality and Fly Injection.*

2. Howell and Wilson give a careful paper on movable kidney in all its various aspects,— historical, anatomical and pathological. Three factors they say are responsible for the greater frequency of this condition in women than in men: (1) The greater shallowness of the renal fossæ. (2) The greater frequency of chronic constipation. (3) Tight lacing.

5. MacLennan reviews the subject of "Stauungshyperämie," and gives various practical points in the use of this method of treatment. He presents the more common objections to this method, and shows how the dangers and discomforts, such as pain, increased infection, bleeding, etc., can be avoided. He counsels the avoidance of tight bandaging as shown by the production of blisters on the affected part, and recommends that the physician should gain experience with the milder forms of sepsis before treating more severe cases, and that in all cases it is not a substitute for other means of treatment but an aid; that antiseptics and dry dressings should be used as they are needed. He describes in detail the technic. He states that this method is agreeable to the patient as well as efficacious; that shorter incisions are needed and fewer operations.

6. Flett presents cases in which he has used Bier's method of treatment with comments of a practical nature.

11. Bridge believes that fly infection of milk and other infants' food plays a large part in the etiology of infantile summer diarrheas. He quotes several cases in support of this view, and gives suggestions as to barn and house hygiene to prevent or diminish this source of infection.

[J. B. H.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 34.
AUG. 20, 1907.

1. OTTO, R. *On Anaphylaxis.*
2. BAER, G. *The Opsonic Index and the Results Obtained in Cases Treated with Marmorek's Antituberculosis Serum.*
3. *CURSCHMANN, H. *Hysterical Sweating.*
4. *EBSTEIN, E. *The Relation between Pneumonia and Gout.*
5. *SCHLECHT. *Rumpel's Capsules (Capsulæ Gelodurata) and Their Advantages.*
6. RINGEL. *Congenital Umbilical Hernia.*
7. GRÜNBERG, K. *Iodide and Mercury Treatment of Tuberculosis of the Nose, Pharynx and Larynx.*
8. RISEL, H. *Statistics on Infant Mortality.*
9. LILIENSTEIN. *Etiology and Symptomatology of Cysts of the Pancreas.*
10. HARTLEIB. *Enchondroma of the Larynx.*
11. FEDERSCHMIDT. *Cheese Poisoning.*
12. HOFMANN, A. *A Simple Extension Apparatus.*

3. Curschmann reports two cases of long continued periodic sweating, occurring in a mother and daughter. They appeared two or three times daily, were of drenching character, unaccompanied by chill or by fever, and without any preceding hysterical manifestations (convulsions, etc.). During the attack the mind was clear, the patient quiet and peaceful, no preceding embarrassment or excitement was demonstrable. The sweats presented the picture of those resulting from the use of diaphoretics. Blood pressure and frequency of pulse were never increased. No organic changes in the central nervous system could be made out. Treatment by suggestion proved promptly effective in both cases. The author considers the etiology to have been hysterical. He has found no similar cases reported in the literature.

4. Since the eighteenth century a relation between croupous pneumonia and the acute attack of gout has been recognized. Ebstein reports three cases of his own and three from the literature, in which persons with a tendency to gout have experienced an acute attack following pneumonia. The gout appears after the pneumonia has begun to resolve, and is probably due to the fact that with the resolution of the exudate in the lungs, comes a destruction of cell elements, and a sudden setting free of nuclein bases and uric acid, which owing to the existing diminution in the nuclein metabolism precipitate the acute attack of gout.

5. Schlecht describes the new "capsula gelodurata" of Rumpel, which resembles the "glutoid capsule" of Sahli, differing only in that fluids can be administered as well as solids. A careful series of experiments has shown that the capsules are dissolved only in the intestine. They are extremely useful for the administration of drugs which upset the stomach, or whose action is primarily desired in the intestime. The author has had great success with this method of administering vermifuges.

[R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 31.
AUG. 5, 1907.

1. ASCHOFF, L. *The Lower Uterine Segment and Placenta Previa.*
2. *CLAUS. *Syphilitic Affection of the Parotid.*
3. GRÜNBAUM, D. *A Case of Primary Carcinoma of the Appendix.*
4. *SCHANZ, A. *A Typical Diseased Condition of the Spinal Column.*
5. *HERZOG, B. *The Early Diagnosis of Syphilis of the Heart.*
6. PICK, L. *Menigococcus Spermatocystitis.* (Concluded.)

2. Claus reviews the literature of tertiary syphilis of the parotid gland, a condition of considerable rarity, and gives his observations of a case, a woman with a syphilitic history, who had a hard, non-painful swelling of both parotids, more pronounced on the left, associated with a left-sided chronic purulent otitis media. Under antiluetic treatment both the glandular enlargement and the discharge from the ear cleared up. The author considers that both conditions were of syphilitic origin.

4. Schanz describes a condition of the spinal column, marked by pain and tenderness over certain of the vertebræ, associated with tender points over the ribs and pelvic bones, without any evidence of an inflammatory process. This condition is usually accompanied by gastro-intestinal, or general nervous symptoms. The author considers this to be a condition very like the pain of flat foot. He recommends rest, followed by massage and gymnastics. A support worn about the thorax is of great aid. [The author offers no convincing evidence of any sort in support of this "new disease," the symptoms of which exactly resemble those of certain cases of neurasthenia.]

5. As a result of numerous observations, Herzog believes that the early diagnosis of syphilitic involvement

of the heart is possible, but only when the aorta and coronary arteries are affected. In every severe case of angina pectoris in the young or middle aged, in cardiac enlargement without other demonstrable cause, or in aortic insufficiency appearing in middle age without a preceding acute articular rheumatism, or other acute infection, syphilis should be always thought of as the probable causal factor. [R. D.]

No. 32. AUG. 12, 1907.

1. *PEL, P. K. *Is Opium Useful or Harmful in Acute Appendicitis?*
2. SELIGMANN, E. *Contributions to the Question of So-Called Absorption of the Complement.*
3. EYSBROEK, H. *The Specificity of Amboceptors.*
4. FINK, H. *Principles of the Different Karlsbad Gallstone "Cures."*
5. HEYMANN, H. *Operative Perforation of the Non-Pregnant Uterus.*

1. Pel believes that, in the hands of a carefully trained man, opium is of great value in the acute attack of appendicitis, especially in cases of beginning inflammatory process with walling off around the appendix. The rest which opium brings the gut hastens the walling-off process. It is unnecessary to give large doses, nor is morphine of advantage. The author uses tinctura opii in doses of from 5 to 10 drops, repeated till the pain is dulled and the patient is quieted. With careful observation, the symptoms indicating immediate operative interference are never masked. [R. D.]

DIE THERAPIE DER GEGENWART. No. 9.

SEPTEMBER, 1907.

1. *EWALD, C. A. *Myxoneurosis Intestinalis, with Some Remarks on the Technic of Rectoscopy.*
2. *SCHMIEDEN. *The Surgical Treatment of Exophthalmic Goiter.*
3. LOEWENTHAL, W., AND V. RUTKOWSKI, W. *The Action of Roentgen and Radium Rays on Trypanosoma Lewisii.*
4. WINTERNITZ, H. *The Testing of the Secretory Function of the Stomach by Means of the Test Meal.*

1. Ewald claims that it is clinically impossible to differentiate between enteritis membranacea, colitis mucosa, and myxoneurosis intestinalis. Neither the symptoms nor the stools show differences characteristic enough to warrant a diagnosis. Valuable data can, however, be obtained by use of the rectoscope. In the two former conditions evidences of inflammation, injected vessels, generally engorged mucosa, slight loss of tissue, with small adherent bits of mucus, are to be seen; in the latter the mucous membrane is pale, the mucus is more generally disposed, and, most important of all, the gut shows a marked tendency to spasm, so marked, indeed, as to lead to a suspicion of actual stenosis. The author considers this last as almost pathognomonic. He recommends a bland diet, which leaves a large, soft residue, and high enemata of oil and bismuth. He appends an excellent description of his technic of rectoscopy.

2. Schmieden reviews the symptoms of exophthalmic goiter, and agrees with the generally accepted theory of their thyrogenic origin. He believes that operative treatment is often too long delayed. An important contra-indication to operative treatment is the presence of advanced symptoms, particularly marked cardiac involvement. When the patient, seen early in the disease, does not react after a fair trial to medical treatment, operation for the removal of the gland should be at once resorted to. He has had excellent operative results. [R. D.]

The Ophthalmo-Tuberculin Reaction. COMBY (*Presse Médicale*, Aug. 10, 1907) has tried the ophthalmo-tuberculin reaction suggested by Calmette in two series of 16 and 53 children. His results agree absolutely with those of Calmette. In the first series he had two very violent reactions in the eye causing a conjunctivitis that took eight days to disappear. After this he reduced the strength of his tuberculin by one half; this he used on 108 cases with no bad results. The tuberculous individual reacts with a marked conjunctivitis with exudate, while a normal person shows at most a moderate injection without exudate. The other eye serves as a control for comparison. Any ocular lesion already present is a contra-indication against the use of this test. [J. B. H.]

The Ophthalmo-Typhoid Reaction. CHANTEMESSE (*Le Bulletin Médicale*, July 24, 1907) describes an ophthalmo-typhoid reaction similar to that of Calmette and Wolff-Eisner with tuberculin. By means of absolute alcohol he obtains a dry precipitate of the typhoid toxins; 1–50 mg. of this dissolved in a drop of water constitutes the dose used in this test. The results, he claims, are very decisive, whether positive or negative. In healthy persons or those suffering from a disease other than typhoid, there is only a mild injection of the conjunctiva, coming on in two to three hours and disappearing at the end of five or six hours. In the case of typhoid it is vastly more severe, reaching a maximum in six to twelve hours, and lasting eight to twelve more with a sero-fibrinous exudate and symptoms of a marked conjunctivitis. Although it is too soon to say definitely, this reaction seems to appear very early in the disease, in some instances earlier than the Widal reaction. [J. B. H.]

Thyroid Insufficiency. LEOPOLD-LEVI AND HENRI DE ROTHSCHILD (*Gazette des Hôpitaux*, June 29, 1907) contribute an interesting article with the title, "The Little Signs of Thyroid Insufficiency." Among the stigmata they mention transitory edemas without albuminuria, especially in the frontal and facial region, continued coldness of the extremities, cyanosis of the hands and feet, subnormal temperature, chilly feelings, an extreme sensitiveness to cold. Constipation is a common and persistent symptom. Such persons are very easily fatigued and have poor appetites. Headaches are frequent as well as muscle and joint pains; insomnia is common. Obesity, a sluggish mentality and precocious senility often appear. There are periodic auto-intoxications, and infections, vomiting spells without apparent cause, extreme nervousness. Such symptoms will often disappear under thyroid medication. [J. B. H.]

Miscellany.

"KULIN POLYGAMY."

A PRACTICE that goes by this name — an absurd one, since there is no polygamy about it in the sense in which we understand it — has lately been the subject of several letters published in the London *Times*, as we learn from last Sunday's *Sun*. It seems to prevail among the Bengalis. Some of the *Times's* correspondents approve of it as a means of improving the physique of a race; other speak of it as "revolting" and "abhorrent." Among those who defend it is that interesting person, Mr. George Bernard Shaw. It is well known, of course, that in most communities many women eligible to matrimony fail to form a marital alliance with a suitable man and consequently remain spinsters. Their reproductive capacity is wasted. The Bengal practice purports to spring from a patriotic desire to save this waste. Mr. Shaw says: "What does a Bengali father do under the same circumstances? He selects a picked man, a Brahman representing the highest degree of culture and character in his class, and pays him £700 to enable his daughter to become the mother of a well-bred child."

There is no pretense of marriage, as we understand it; the Brahman is simply hired to beget a child. If more children are wanted, presumably other picked men may be provided for the same woman, and perhaps that accounts for the use of the word polygamy. The whole business

seems to us to be on a par with the breeding of domestic animals. The farmer buys the service of a selected stallion for his mare; the rich Bengali hires a picked man to serve his daughter. We must agree with those who call the practice revolting and abhorrent. It is the effort of medical men to promote the physical welfare of all human beings, but never at the expense of morality and social order; consequently we expect that our British confrères will join us in protesting against approval of the strange Bengal custom. — *New York Medical Journal.*

IN HONOR OF ROBERT KOCH.

A movement for the foundation of an institution which is to bear the name of Robert Koch is on foot in Germany, and a committee has been formed for the purpose of collecting money for the object. The chairman is Dr. von Studt, Prussian State Minister; the vice-president, Privy Councillor Althoff; the secretary, Professor Schwalbe, editor of the *Deutsche medizinische Wochenschrift;* the treasurer, Dr. Paul von Schwabach, General Consul, Berlin. Among the members are Dr. Bumm, President of the Imperial Health Bureau, Berlin; Count Henckel, Prince von Donnersmarck, member of the Prussian House of Lords; Professor Ehrlich, of Frankfort; Professor Fiedler, some time physician-in-ordinary to the King of Saxony; Dr. von Böttinger, member of the Prussian Chamber of Deputies; Dr. Förster, director of the Cultus-Ministerium, Berlin; Prof. Bernhardt Fraenkel, of Berlin; Count von Posadowsky-Wehner; Chamberlain v.d. Knesebeck, Imperial Vice-Upper Master of Ceremonies; Surgeon-General Ilberg, physician to the Kaiser; the Bavarian Envoy in Berlin; the Ministers of the Interior of Saxony, Würtemberg, Baden and Hesse; and the Surgeon-General of the Prussian army. The institution, which is to be applied to the furtherance of research in all directions for the discovery of means of checking the diffusion of tuberculosis, is intended to be a permanent memorial of the discovery of the tubercle bacillus by Professor Koch twenty-five years ago. Appeal is made for contributions sufficient to make the institution a tribute of gratitude to Koch, similar to those with which the name of Pasteur has been honored in France and that of Lister in England. Contributions to the Fund should be addressed to the Treasurer, Dr. Paul von Schwabach, S. Bleichröder's Bank, 63, Behrenstrasse, Berlin. — *British Medical Journal.*

RESOLUTIONS AGAINST CONTRACT PRACTICE.

At an adjourned stated meeting of the Norfolk South District Medical Society, held in Boston Oct. 3, 1907, the following resolutions were unanimously adopted:

Whereas it has become a common practice with many of the Fellows of this society to engage in what is known as contract work or lodge work, and whereas this method of conducting business is unworthy of an honorable physician and derogatory to his professional character and standing, and also in the end a source of loss rather than a gain in income;

Therefore, resolved, That as a society we condemn contract practice in our profession, and we all will in the future refuse to consult with physicians engaged in this work (except possibly in a case of absolute emergency where a person's life is actually at stake) or to affiliate professionally with such persons.

Resolved, That all the Fellows of this society shall be required to sign a promise or statement that after the contracts which have already been made shall have expired, they shall refuse to make any further contracts under the penalties heretofore stated.

Resolved, That these resolutions be entered on the records of the society and a copy of the same be transmitted to the secretaries of the other district societies of this state and also be furnished for publication to the Boston Medical and Surgical Journal and the *Journal of the American Medical Association.*

Charles S. Adams, M.D.,
Secretary, Norfolk South District Medical Society.
Wollaston, Mass., Oct. 3, 1907.

Correspondence.

COLLECTIVE INVESTIGATION OF THE POLIOMYELITIS EPIDEMIC OF THE YEAR 1907 BY THE COMMITTEE APPOINTED BY THE NEW YORK NEUROLOGICAL SOCIETY, WITH THE CO-OPERATION OF THE COMMITTEE APPOINTED BY THE SECTION ON PEDIATRICS OF THE NEW YORK ACADEMY OF MEDICINE.

New York, Oct. 29, 1907.

Mr. Editor: The members of the committees above mentioned are anxious to make a thorough investigation of and to collect all the data relative to the epidemic of poliomyelitis of 1907 in New York City and its immediate vicinity. To this end they must have the co-operation of all those who have had, or will have, an opportunity of studying this disease in hospital or private practice. Physicians willing to assist in this work will kindly inform the secretary, Dr. Edwin G. Zabriskie, No. 37 West 54th Street, New York City, who will send history forms so as to secure uniform records. Physicians who cannot collaborate with the committee will confer a favor by reporting to the secretary the number of cases of poliomyelitis they have treated during the past six months.

The joint committee wishes to state most emphatically that due credit will be given to every one who contributes to this collective investigation, and that the publication of the committee's report will in no wise interfere with any article or articles to be published on this subject. Moreover, the committee's report will surely not be printed earlier than a year from date, so that medical men will have ample time to publish their articles long before the committee will have its report ready.

B. Sachs, *Chairman,* E. G. Zabriskie, *Secretary,* J. R. Hunt, J. F. Terriberry, L. Pierce Clark, Simon Flexner, for the Rockefeller Institute; C. F. Bolduan, for the Department of Health, New York City,
Committee of the Neurological Society.

L. E. La Fetra, Herman Schwarz, L. C. Ager, Brooklyn, *Committee of the Section on Pediatrics of the New York Academy of Medicine.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCT. 19, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	5	4
Chicago	508	155	Waltham	7	2
Philadelphia	—	—	Pittsfield	6	1
St. Louis	—	—	Gloucester	10	3
Baltimore	210	68	Brookline	3	2
Cleveland	—	—	North Adams	5	3
Buffalo	—	—	Chicopee	4	3
Pittsburg	—	—	Northampton	4	1
Cincinnati	—	—	Medford	6	2
Milwaukee	—	—	Beverly	2	1
Washington	—	—	Leominster	5	1
Providence	82	26	Hyde Park	5	1
Boston	208	62	Melrose	3	2
Worcester	34	8	Newburyport	—	—
Fall River	35	24	Woburn	2	—
Cambridge	32	6	Marlboro	3	0
Lowell	35	10	Westfield	3	1
Lynn	23	7	Peabody	—	—
New Bedford	20	10	Revere	3	1
Springfield	16	5	Attleboro	2	1
Lawrence	27	8	Clinton	6	2
Somerville	24	6	Adams	5	3
Holyoke	22	6	Gardner	—	—
Brockton	9	3	Milford	—	—
Malden	7	—	Watertown	3	0
Chelsea	15	4	Plymouth	—	—
Salem	8	3	Weymouth	2	0
Newton	4	4	Framingham	—	—
Haverhill	6	1	Southbridge	6	2
Fitchburg	6	3	Wakefield	—	—
Everett	7	—	Webster	—	—
Taunton	10	4			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED OCT. 16, 1907.

G. W. STONER, surgeon. Directed to report at Washington, D. C., Oct. 22, 1907, for special temporary duty; upon completion of which to rejoin his station at Ellis Island, New York, Oct. 14, 1907.

P. M. CARRINGTON, surgeon. Granted leave of absence for 3 days from Oct. 14, 1907, under paragraph 189, Service Regulations.

T. CLARK, passed assistant surgeon. Directed to proceed to Allentown, Pa., for special temporary duty; upon completion of which to rejoin his station at Philadelphia, Pa. Oct. 14, 1907.

T. CLARK, passed assistant surgeon. Directed to report at Washington, D. C., Oct. 22, 1907, for special temporary duty; upon completion of which to rejoin his station at Philadelphia, Pa., Oct. 14, 1907.

J. W. SCHERESCHEWSKY, passed assistant surgeon. Directed to report at Washington, D. C., Oct. 22, 1907, for special temporary duty; upon completion of which to rejoin his station at Baltimore, Md. Oct. 14, 1907.

T. D. BERRY, passed assistant surgeon. Granted leave of absence for 1 month and 10 days from Nov. 1, 1907. Oct. 16, 1907.

A. J. MCLAUGHLIN, passed assistant surgeon. Directed to proceed to Paris, France, London, England, and Berlin, Germany, for special temporary duty; upon completion of which to rejoin his station at Naples, Italy. Oct. 11, 1907.

H. G. EBERT, assistant surgeon. Relieved from the U. S. Revenue-Cutter "Perry," and from duty at Seattle, Wash., and directed to report to Passed Assistant Surgeon Hobdy, San Francisco, Cal., for special temporary duty. Oct. 12, 1907.

W. H. FROST, assistant surgeon. Granted leave of absence for 15 days from Oct. 13, 1907. Oct. 10, 1907.

L. C. BEAN, acting assistant surgeon. Granted leave of absence for 28 days from Oct. 1, 1907. Oct. 11, 1907.

F. DUFFY, acting assistant surgeon. Granted leave of absence for 10 days from Sept. 6, 1907. Oct. 11, 1907.

C. M. FRISSELL, acting assistant surgeon. Granted leave of absence for 15 days from Oct. 15, 1907. Oct. 15, 1907.

K. S. KENNARD, acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Kennard for 28 days from Sept. 10, 1907, amended to read 26 days, only. Oct. 11, 1907.

B. ONUF, acting assistant surgeon. Granted leave of absence for 9 days from Sept. 26, 1907, on account of sickness. Oct. 11, 1907.

M. V. SAFFORD, acting assistant surgeon. Directed to report at Washington, D. C., Oct. 22, 1907, for special temporary duty; upon completion of which to rejoin his station at Boston, Mass. Oct. 14, 1907.

J. G. STANTON, acting assistant surgeon. Granted leave of absence for 15 days from Oct. 12, 1907. Oct. 11, 1907.

H. GAHN, pharmacist. Granted leave of absence for 12 days from Oct. 14, 1907. Oct. 11, 1907.

L. P. HALL, pharmacist. Excused from duty, without pay, for 10 days from Oct. 14, 1907. Oct. 14, 1907.

L. C. SPANGLER, pharmacist. Granted leave of absence for 23 days from Nov. 7, 1907. Oct. 16, 1907.

PROMOTION.

J. M. BELL, pharmacist. Promoted to pharmacist of the second class, effective Oct. 31, 1907. Oct. 14, 1907.

CASUALTY.

JOHN GODFREY, surgeon. Died at Detroit, Mich., Oct. 16, 1907.

APPOINTMENTS.

THE following appointments have been made to the staff of the Rockefeller Institute for Medical Research: DR. HIDEYO NOGUCHI promoted to Associate in Pathology; DR. G. W. HEIMROD, Assistant in Biological Chemistry; DR. W. A. JACOBS, Fellow in Biological Chemistry; MR. P. A. KOBER, Scholar in Biological Chemistry; DR. R. V. LAMAR, Scholar in Pathology.

DR. GEORGE L. WALTON has been appointed Consulting Neurologist to the Massachusetts General Hospital.

DR. HENRY C. BALDWIN has been appointed Physician to Out-Patients in Diseases of the Nervous System at the Massachusetts General Hospital.

The following appointments have been made at the Harvard Medical School: DR. J. D. BARNEY, Assistant in Anatomy; F. C. BLANCK, Research Assistant in Biological Chemistry; DR. E. N. TOBEY, Assistant in Bacteriology.

SOCIETY NOTICES.

FOUR LECTURES ON CLIMATOLOGY AND CLIMATO-THERAPY. — Dr. E. O. Otis will give a course of four lectures upon Climatology and Climato-therapy, illustrated by the stereopticon, upon successive Wednesday evenings in November, beginning Nov. 6, in the amphitheater of the Tufts College Medical School. Physicians, nurses and all interested in the subject are cordially invited to attend. The subjects are as follows: I. Nov. 6. The general principles of climate or meteorology. II. Nov. 13. Climatic features, classification of climates, characteristics of various climates. III. Nov. 20. Climatic or health resorts and their application to various diseases, especially to tuberculosis. IV. Nov. 27. The influence of climate upon man in health and disease.

NEW YORK AND NEW ENGLAND ASSOCIATION OF RAILWAY SURGEONS. — The Seventeenth Annual Meeting will be held at the New York Academy of Medicine, Thursday and Friday, Nov. 14 and 15, 1907.

CLINICAL LECTURES ON DISEASES OF THE SKIN. — The governors of the New York Skin and Cancer Hospital announce that L. Duncan Bulkley will give a ninth series of "Clinical Lectures on Diseases of the Skin," in the Out-Patient Hall of the hospital, on Wednesday afternoons, from Nov. 6 to Nov. 20, 1907, at 4.15 o'clock. The course will be free to the medical profession.

RECENT DEATHS.

DR. JOSEPH P. GRAY, a well-known practitioner of the Borough of the Bronx, New York City, died on Oct. 19. He was graduated from the College of Physicians and Surgeons, New York, 1882.

DR. HOSEA J. BABBIN, United States Navy, retired, died in Brooklyn, N. Y., on Oct. 25. During the Spanish-American War he was President of the Examining Board at the Navy Yard in Brooklyn, and later he was placed at the head of the Naval Hospital there. A short time since he was transferred to the retired list as Medical Director with the rank of Rear Admiral.

CUSHMAN DAY, M.D., M.M.S.S., died in Boston Oct. 26, 1907, aged twenty-five years.

BOOKS AND PAMPHLETS RECEIVED.

Annual Report of the Board of Health of the Department of Health of the City of New York for the Year ending Dec. 31, 1905. Vols. I and II. New York. 1906.

Annual Report of the Department of Health of the City of Chicago for the Year 1906. Chicago. 1907.

Merck's 1907 Index (third edition). An Encyclopedia for the Chemist, Pharmacist and Physician. New York: Merck & Co. 1907.

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Original Articles.

EXPERIENCE WITH OPSONINS AND BACTERIAL VACCINES IN THE TREATMENT OF TUBERCULOUS AND NONTUBERCULOUS ARTHRITIS.*

BY CHARLES F. PAINTER, M.D., BOSTON.

OBSERVERS of new phenomena lay themselves open to errors both of observation and interpretation. Particularly is this true when the phenomena concern problems, the solution of which has been sought long and diligently. There has never been a time when so many well trained men were working upon the problems of physiological chemistry and bacteriology as there are at the present day. At this time, also, great popular as well as professional and scientific interest has been aroused in the subject of tuberculosis, and, to a lesser degree, in chronic nontuberculous joint disease. Witness the money being advanced for the anti-tuberculosis crusade, and the attention devoted by all classes of society to attempts made to wipe out this curse. In the midst of all this popular enthusiasm and highly specialized scientific attainment, has come a new method which has much to recommend it from the theoretical and laboratory points of view. The questions at issue are, Do the clinical results correspond with the laboratory findings? Are the limits of error in methods of laboratory investigation so wide that the conclusions which seem legitimate from such observations may be erroneous? To the first of these questions only will the writer devote his attention.

The literature on opsonins and bacterial vaccines is getting to be quite voluminous, but the greater part of it is concerned with laboratory technic and theoretical considerations of the processes by which immunity may be brought about. A very few reports of clinical experience are on record, and many of these are valueless because of the paucity of data recorded, or because of the obvious inaccuracies of the observations.

Clinical experience must be the court of last resort in matters of this sort for many years to come. The human being is not a chemical retort into which reagents may be injected and results obtained which are identical with those we look for when experimenting in the laboratory upon the lower orders of animal life. Wonderful as have been the advances made, rational conservatism must be the prevailing state of mind of those who would not be carried away by their enthusiasm.

Attempting to put ourselves in this mental attitude, it is proper to review the facts. The laboratory side of the question has been thoroughly presented in the previous paper, and even though clinical experience cannot wholly bear out the brilliant results obtained along purely scientific lines, this does not in any way vitiate the results of such inquiry.

Successes obtained by some observers in the treatment of septic wounds, boils, acne, and similar localized infections, encourage the clinician to hope that there are as yet some ill-understood obstacles in the way of the application of the method to those conditions where it has failed. The good results in some other fields, notably in the treatment of diphtheria, by an analogous method, also offer much encouragement. One cannot read the literature covering the clinical experience of the writers without considerable misgiving as to the practical value of bacterial vaccination. Neither can he be particularly encouraged in the hope that the opsonic index is to be of advantage as a guide to the dosage or the repetition of inoculation. The consideration of its value as a diagnostic aid has not been extensively considered in the literature. Its value from this point of view, in the writer's experience, will appear in the course of this paper.

A few citations from current literature to show the character of the reports of clinical observers may not be amiss. These are cited because in most cases the writer believes acceptance of the findings at their face value would lead the uninitiated reader to improper conclusions regarding the efficacy of the method. French,[1] in the *British Medical Journal*, reports a case of tuberculous dactylitis and tuberculous disease of the os calcis, both having fistulæ. The child had a low opsonic index to the tubercle bacillus. One five thousandth mgm. of tuberculin "R" was given. A negative phase lasting nearly four weeks was the result. A second inoculation, again followed by a prolonged negative phase, was accompanied by some improvement. A third inoculation was given and the sinuses then promptly healed, and at the end of four months the writer says the patient was practically well. Such a case as this, even though it represents an observer's personal experience with bacterial vaccines in the treatment of tuberculous arthritis, should not be given much weight in determining the value of tuberculin in the treatment of bone disease.

Ohlmacher,[2] writing in the *Journal of the American Medical Association*, reports a remarkable series of cases of various sorts treated by bacterial vaccines. In determining the dosage and frequency of inoculation he was admittedly lax in the observation of the opsonic index, without which Wright himself, and Ross, the principal exponent of his technic on this side of the water, claim satisfactory results cannot be obtained. In spite of this failure the results were so uniformly good in all cases, he concludes that, with the possible exception of diphtheria antitoxin in the treatment of diphtheria, there is no more valuable reagent than bacterial vaccines for the treatment of many surgical infections.

Kellogg[3] finds the determination of the opsonic index of value diagnostically in the following reported case: A young woman consulted him because of a troublesome hip. There had been an injury to this joint some years previously, and she had been obliged to use crutches during all

*Read before The Massachusetts Medical Society, June 11, 1907.

[1] H. French: Brit. Med. Jour., Feb. 2, 1907, p. 256.
[2] Ohlmacher: Jour. Am. Med. Asso., Feb. 16, 1907.
[3] Kellogg: Northwest Med. Jour., vol. v, no. 1, p. 20.

this time. The head of the affected femur was dislocated. *One* observation showed the tubercular opsonic index to be .22. From this he concludes that the disease was a tuberculous one. In all probability this was true, but to have argued that it was because of *one* positive result in testing the phagocytic power of her leucocytes, constitutes a very insecure basis for such a conclusion. A second case is reported by the same author. A patient came under his care for a pleural effusion. The chest was aspirated, but guinea pigs inoculated with this fluid showed no signs of tuberculosis. A diagnostic dose of tuberculin was given and a typical reaction followed. Between July 12 and August 24, of the same year, she was inoculated with Koch's tuberculin, "R," not over three times (the record states at ten-day intervals). At the end of this period her physical signs had all cleared up and her weight had increased 7½ lb. I submit that the proof of the tuberculous character of her effusion is lacking, and that to offer such a case as a striking example of the curative value of tuberculin in such conditions is improper.

Wolff [4] reports some interesting results in the treatment of pneumonia by a pneumococcus vaccine. He feels that raising the opsonic power of the patient's serum in pneumonic cases was attended by more favorable results than attends the usual treatment of pneumonia patients, but thinks too few observations have been made to justify any positive assertion that such is the case.

Hollister [5] reports several cases too briefly to be of any scientific value. The general impression conveyed was that there was improvement, but not such as would be inconsistent with other and general treatment, simultaneously carried out.

Ross,[6] in a recent article, reports success in a number of cases of lupus, empyema, staphylococcus infection, endocarditis and Malta fever.

Bunch [7] refers to two cases where bacterial vaccines were employed to reinforce surgical treatment. He believes that this method offers great possibilties in the management of surgical tuberculosis by diminishing the negative phase produced by operating upon tuberculous foci, when the resistance of the patient has not been properly fortified. He also advocates the use of vaccines after operation during long periods, for the same reason. He cites a case of extensive lupus operated upon by Mr. Godlee. The operation was an excision of the lupoid tissue, followed by skin graft. Before the operation and for some time after, injections of tuberculin were carried out, in consequence of which he believes that the entire graft was successful. One one-thousandth mgm. was used at ten-day intervals. He also reports a case of acetabular hip disease which had been treated for one and one-half years, by apparatus and bed treatment, without any appreciable progress. An abscess developed, for which operation was performed. Just before operation 1-500 mgm. of tuberculin was injected, and this was repeated during the succeeding four months, at the end of which time the patient was reported as practically well. He also refers to an article of Turton's, in which 30 out of 34 cases of different sorts were treated with bacterial vaccines with very satisfactory results.

Fraser [8] reports 41 observations upon the opsonic power (tubercular) of the blood in healthy individuals. In the first place she attempted to establish a mean of variation. In the second place she compiled a table of 43 indices from individuals who were suffering from other diseases than tuberculosis. She also reports observations upon the tuberculo-opsonic index in nine members of tuberculous families. Her next series of observations was upon 91 cases of tuberculous disease. She found no striking diagnostic value in the tuberculo-opsonic index. In 58 of these cases the index was higher than that seen in health, while in 33 it was within normal limits. She found she could not classify her cases according to their indices as Wright claims to be able to do. The low index did not necessarily show a localized focus; neither did a high index, within the limits of variation, indicate a generalized process.

Brooke [9] refers to Bullock's remarkable series of staphylococcus infections reported in the *Practitioner* for November, 1905. Eleven cases treated with vaccines showed 9 prompt and complete cures.

There is a notable absence of clinical reports in German and French literature. This absence should have considerable more significance than does the too sanguine position of the observers to whom reference has been made. A few good results have been reported following the use of Marmorek's antituberculous serum, conspicuous among which are the cases cited by Hoffa in a recent article.[10]

In July, 1906, at the commencement of a four months' service at the House of the Good Samaritan, I began the treatment of tuberculous bone disease with Koch's new tuberculin. The inoculations have been kept up by my colleagues, Dr. Augustus Thorndike and Dr. J. S. Stone, during their services up to the present time. The patients upon whom this treatment had been tried were kept in the hospital in nearly every instance throughout this entire period, so that in addition to any benefit which may have accrued from these injections, they have had the benefit of sanitarium treatment. They were all advanced cases when treatment was begun, and were all children. In addition to these children I have followed the same treatment in a few cases of tuberculous bone disease in the adult, at the Carney Hospital. These patients had not the benefit of as good hygienic treatment as had the group at the Samaritan. It was not possible to keep them in the hospital for as long periods and they could not be controlled as well, because they were adults. They were all bad cases. The laboratory work

[4] Wolff: Jour. of Infectious Diseases, Oct. 30, 1906.
[5] Hollister: Surg., Gyn. and Obstet., vol. iii, no. 6, p. 740.
[6] Ross: The Canada Lancet, January, 1907.
Bunch: Lancet, London, Jan. 19, 1907, p. 145.
[8] Fraser: Glasgow Med. Jour., March, 1907, p. 194.
[9] Brooke: Dublin Jour. Med. Sc., Sept. 1, 1906.
[10] Hoffa: Berliner klin. Wochenschr., xliii, no. 8.

in connection with these observations was done through the courtesy of Dr. Leary at the pathological laboratory of the Tufts Medical School. In private practice I have also treated a few patients with bone tuberculosis in this way and in both private practice and at the Carney Hospital clinic we have treated several cases of chronic polyarthritis, of the rheumatoid type.

In brief detail the cases and results have been as follows (their charts have been shown in Dr. Leary's paper):

CASE I. Mrs. B., thirty years. Tuberculosis of the lumbar spine, the left ankle and the right great toe. Clinical diagnosis confirmed, so far as the ankle lesion was concerned, by histological examination of material removed at operation and by the tuberculous opsonic index. Patient had been under apparatus treatment for the Pott's lesion for two years and for the ankle one year. Ten injections of tuberculin were given, beginning with 1-10000 mgm. and going as high as 1-500 mgm. on two occasions. The Pott's lesion has made good progress; the ankle lesion was much worse than at any time for a period of three months, but has slowly been improving during the past four months; the lesion on the great toe has caused no trouble at any time during or immediately before the commencement of the injections. Rest and fixation have been enjoined throughout this entire period. The patient has gained in weight, improved in color and general condition, but no more so than has often been experienced in the same time and under the same conditions of hygiene and protective treatment.

CASE II. Mr. K., thirty-three years. Tuberculosis of mesenteric and retroperitoneal glands. Suppuration and mixed infection with the bacillus pyocyaneus. There is in all probability at this time an osseous involvement of the lumbar spine. There has been no pathological confirmation of the clinical diagnosis. The case has been under treatment for ten months and has had thirteen inoculations with tuberculin and a streptococcus and pyocyaneus vaccine. During the first five months of treatment there was considerable improvement in general condition and local signs, together with an almost complete closure of the sinus. The past six months his general condition has failed markedly; he has developed a very well defined phthisis, his sputum being loaded with tubercle bacilli, and the local signs in his spine have become much worse. His sinus is discharging very freely and death seems imminent at any time.

CASE III. Mr. A., twenty-nine years. Tuberculosis of left hip. Excision. Clinical diagnosis confirmed by histological examination. A very acute case of hip disease, said to be of only four months' duration at the time of admission to the Carney Hospital for excision of the head of the femur. Inoculation commenced before operation in the hope that his local and constitutional resistance might be built up. (*Vide opsonic chart.*) After operation there was a pyocyaneus infection and he was given pyocyaneus vaccine in addition to tuberculin. He was operated upon Oct. 17, 1906, and discharged Jan. 21, 1907. He improved slowly but reacted, it seemed, better than most cases of such severity, and since he left the hospital is reported to be doing well.

CASE VI. Miss M., forty-eight years. Tuberculous cervical adenitis. Phthisis. Chronic infectious polyarthritis. Glands in the neck suppurated. No tubercle bacilli found in smears from this pus; pus not injected into guinea pig. Tubercle bacilli in sputum. Patient had three inoculations with Koch's old tuberculin, and later this was changed to the new "T. R." There was no appreciable improvement in the local condition of the glands, and her pulmonary process became worse. She had five inoculations of the new tuberculin at ten-day intervals. She was discharged from the hospital after a stay of eight months, in a worse condition than at entrance.

CASE V. M. W., five years. Tuberculosis of the lumbar and low dorsal spine. Abscess. The child has been at the House of the Good Samaritan for two years. On entrance there was a large cold abscess which was opened. Tubercle bacilli were demonstrable in a smear from the pus and were grown on culture media. A few days after the abscess was opened he developed scarlet fever and was admitted to the Boston City Hospital. On his return he was treated a year in the wards with jackets. One year ago tuberculin treatment was commenced and as he had a secondary streptococcus infection of his sinus, he was given a streptococcus vaccine, made from his own organism, in addition to his tuberculin. His opsonic chart has been shown. There has been no local improvement of a permanent character. His sinus is still discharging and he has positive signs of phthisis and a suggestion of the development of an hypertrophic pulmonary osteo-arthropathy.

CASE VI. Master C., seven years. Tuberculosis of hip. Amyloid. Clinical diagnosis confirmed by histological examination after operation and by animal inoculation. In many ways this was a most remarkable case. The child came under observation at the Carney Hospital in less than a week after his first symptoms. Limp, pain and muscular spasm, accompanied by a high temperature, led to a diagnosis of acute osteomyelitis. At operation a small amount of pus was obtained coming from a necrotic focus in the neck of the femur. The process extended both up and down the femur and a secondary operation was performed for the removal of more of the dead bone. This was succeeded by an acute nephritis, which virtually became chronic. The spleen and liver were greatly enlarged and there was profuse suppuration from sinuses in the thigh. The boy was soon in such poor condition that it seemed as though he might die at any time. Inoculation with 1-1000 mgm. of tuberculin was commenced and repeated on the average of once in ten days. Improvement, though slow, has been steady since the injections were begun. There is much less discharge from the abscess, his color is better, and his abdominal distention is greatly diminished. The urine also shows less of the products of a chronic nephritis than it did some months ago. This patient had a mixed infection with staphylococcus and was given a staphylococcus vaccine along with the tuberculin. About twenty inoculations were administered. There has been a decided improvement in the general condition of this patient, a change which it seems fair to attribute to the administration of tuberculin. This case would not have been so suggestive were it not for the fact that at the same time we had another child in the hospital in almost the same condition.

CASE VII. F. S. This child is a boy of five and one-half years. He entered the House of the Good Samaritan in the fall of 1906. He had double tumor albus, both of which were suppurating. He was very pale and emaciated and had an enormous abdominal distention, part of which was caused by ascites and part by the size of his liver and spleen. There was a marked "caput medusæ." He had been having treatment under the best of conditions for the two years previous in the Children's, hospitals at Lowell and Bumkin's Islands, and failed to respond at all; in fact, had steadily grown worse. In desperation we commenced the administration of tuberculin, much against my better

judgment, as it seemed as though I should be subjecting the child to an unwarrantable discomfort. He began to improve after a very few injections and under no different constitutional treatment than he had been having for at least two years. He is not now recognizable as the same child who entered the hospital seven months ago. He is fat, of good color; his sinuses are nearly healed; his abdomen is soft and very little enlarged; the area of liver dullness has diminished, and though both spleen and liver are palpable, they are greatly diminished in size. Both knees are nearly completely ankylosed, but in very good position. He has had tuberculin administered with more or less regularity since his entrance. This case seems certainly to have benefited in a most extraordinary manner by the use of tuberculin.

CASE VIII. F. K., six years. Tuberculosis of both hip joints. Abscess. Erysipelas. Child was under treatment at various places for a fairly active tuberculous process in both hips. The left one suppurated, and during the course of the treatment the sinus became infected with streptococci, and she had quite a virulent erysipelas. A culture from her own sinus gave us the opportunity to make a streptococcus vaccine from her own organism, and this was administered along with her tuberculin injections. In this case the pus burrowed out below Poupart's ligament on the anterior surface of the thigh, and though opened freely, two or three times, under ether, refused to cease discharging. After the commencement of vaccine injections there was a very rapid diminution in the discharge until it finally ceased altogether. She was in the hospital about five and one-half months. Her chart has been shown. The progress of the tuberculous phase of her trouble was not affected by the use of tuberculin in any way.

CASE IX. A. McD., four and one-half years. Tumor albus. Abscess. Flexion and subluxation deformity of the knees. This child was transferred from the Convalescent Home of the Children's Hospital, where he had been under treatment for a year or more. His general condition was excellent. The knee itself had six or eight sinuses, from which there was moderate discharge. The joint was very much swollen, caused chiefly by bony thickening. A culture from his sinuses gave a pure culture of the staphylococcus. From this a vaccine was prepared and administered along with tuberculin during the fall and winter of 1906–7. During the past three months he has been at the seashore hospital at Marblehead, and his sinuses are reported closed. During this time he has not been having tuberculin. I could not observe any unusual response to treatment in this case.

CASE X. Miss P., twelve years. Tuberculosis of left hip. Abscess. This child entered the hospital with a very acute hip. She came from poor home surroundings and had had no adequate care. The thigh was flexed to a right angle with the body and traction would not overcome the spasm. Ether was given and the position corrected. Later a deep seated abscess appeared and was opened. From the time that I manipulated her in October, 1906, she commenced to fail. Tuberculin was administered before the manipulation and was continued through the fall and early winter without any effect; the patient became generally infected and died in March, 1907, of tuberculous meningitis. In this case I made the mistake of manipulating the hip-joint and precipitating into the child's general circulation more tuberculous toxins than she could neutralize. I very much question, in view of that fact, if it was proper to have given tuberculin. This catastrophe should not be cited as an argument against the employment of tuberculin, except in cases of a similar character.

CASE XI. Mr. B., forty-five years. Tuberculosis of left hip. Operation. Clinical diagnosis was confirmed by histological examination. Patient was a longshoreman, who had a rapidly developing ankylosis of his left hip, without shortening. An x-ray showed nothing suggestive of tuberculosis and it was regarded as a non-tuberculous, infectious process. Under ether the hip was manipulated. The motion gained was not preserved. Suspicion of tuberculosis again being aroused, he was given a diagnostic dose of tuberculin and had a sharp constitutional reaction but no exaggeration of local symptoms. An open operation was performed upon the hip later, and a number of spurs removed from the superior lip of the acetabulum and a small abscess was exposed in the region of the gluteal bursa. The pathological report from this was tuberculosis. Injections of tuberculin were commenced and continued through the summer, fall and early winter of 1906–7. The patient gradually failed, developed signs of phthisis, and died in the early spring of 1907. Again, in a case of this sort, the lesson it seems to me is that tuberculin is not to be administered, whatever other indications there may be upon estimates of the opsonic power of the patient's serum. Both this case and Case X were treated according to their opsonic indices.

In this series of 11 cases, therefore, we find 4 who were not benefited at all. Two were apparently most extraordinarily improved, and still another (case III) experienced an improvement which, considering the gravity of the symptoms, may fairly be classed as attributable, in large measure, to his vaccines. Two have died and a third is dying. It is an open question if another (case V) has not been made temporarily worse by the treatment. If we take out the 2 cases who have died, and it is fair to do this because they were cases in which the surgical measures employed may have imposed more of an infection upon the patients than it was reasonable to suppose any vaccination could take care of, there are only 2 cases left to speak positively in favor of the employment of tuberculin in the treatment of bone and joint disease. My experience, however, leads me to wish to give the method a longer trial, and with a more judicious selection of cases, I believe better results may be forthcoming.

If the outcome of vaccine treatment has not been brilliant in tuberculous lesions it has been even less so in the case of non-tuberculous lesions.

In chronic polyarthritis it would be the greatest possible boon if the opsonic test could be employed to discriminate between types of infection. If this could be accomplished with any degree of certainty, the next step, that of making a bacterial vaccine for purposes of treatment, should be a comparatively easy one.

In the earlier part of our experience with opsonic work there seemed to be considerable to suggest the possibility of a solution of the problems in the diagnosis and treatment of chronic polyarthritis. When, however, one regards the cases through a long perspective, there is not much to give encouragement at the present time. In acute infectious lesions of joints, such as gonorrheal arthritis, encouraging reports are coming from such reliable sources as the Johns Hopkins

Hospital and the Loomis Laboratory in New York, but the chronic problem seems to be a very different one.

Schüler, in Germany, has isolated from a very large proportion of the cases upon which he has been privileged to operate a bacillus which he regards as the specific organism of chronic progressive polyarthritis. Three years ago Fayerweather isolated from the knee-joint of a patient, upon whom I had operated at the Carney Hospital, an organism which he has described [11] and which Schüler [12] has declared from the description in Fayerweather's article to be identical with his bacillus.

The cultures of this organism had been preserved in the Tufts Pathological Laboratory, and we have been working with a vaccine which Dr. Leary has prepared from these cultures, in an attempt to diagnose and treat the type of polyarthritis with which, according to Schüler, this bacillus is constantly identified. All that can be said as a result of practically a year's experience with the application of the opsonic test for this bacillus is that we have been able to obtain a characteristic serum reaction in the blood of nearly all the patients who were possessed of the clinical signs of this type of polyarthritis. When it has come to treatment I think it is fair to say that there has been no considerable degree of improvement in any case, at least none which is not frequently seen in cases treated by other methods.

The fact that there has been such a uniformity in the opsonic findings in cases that are clinically of one type, together with this further observed fact, that when inoculated with a vaccine made from this organism they reacted locally, just as tubercular joints will react locally to too large an injection of tuberculin, it would seem that a lead had been given which it is worth while to follow.

The following cases are reported to show the kind of problems which have been attacked rather than to record favorable results of treatment:

Case XII. Mrs. L., forty years. Infectious polyarthritis. For five or six years the patient has been gradually becoming crippled in all of her principal joints and has been a great sufferer. With it all has come a considerable degree of neurasthenia. The joints are swollen, only slightly deformed, and possess very little motion. There is occasionally some redness over the phalangeal joints. Patient has been able to sit up in a chair, but walking has been impossible, except with the assistance of two persons to support her. All the possible sources of infection were investigated to make sure that there was no present infective focus. A blood culture was made and found to be negative. Cultures from the stools were also made, but the investigation along this line was not completed. The opsonic index to the staphylococcus aureus, the streptococcus, and Schüler's bacillus of villous arthritis was determined. The reports showed that the index was low, at various times, to each of these organisms, and vaccines were given for considerable periods, being graduated according to the response of the patient's serum to the inoculations. After approximately five months of such treatment there has been no appreciable improvement in the patient's local condition, which could be attributed to the vaccines. I think it is fair to assume, therefore, that the inoculation treatment in her case has been a failure.

Case XIII. Mr. F., forty-eight years. Chronic, progressive, infectious polyarthritis. Three years' duration. No present source of infection made out. Eighteen years ago had gonorrhea. Nearly all the joints in the body have become involved. No redness or other signs of acute inflammation. Marked deformities of the knees and limitation of motion in all the joints which have been involved. A blood culture was sterile. The patient's index was low to Schüler's organism and also to the streptococcus. No improvement attended the administration of vaccines from either of these organisms. During the treatment the patient has developed an iritis which has pretty completely impaired the vision in one of his eyes.

Case XIV. Mr. S., twenty-one years. Chronic infectious polyarthritis. After an exposure to dampness and cold one year before entrance to the Orthopedic Clinic of the Carney Hospital, the patient began to have swelling, stiffness and pain in both knees. This was rapidly succeeded by similar conditions in the wrists, fingers and feet. His index was low to Schüler's organism, but neither local nor constitutional condition was benefited at all by a few inoculations with a vaccine made from this organism.

Case XV. Mrs. S., thirty-eight years. Chronic infectious polyarthritis. Patient has had a chronic suppurating ear for several years. Following the birth of a child five years before, coming under vaccine treatment, she began to have trouble in several joints. The knees have become so badly flexed that she cannot straighten them completely. Her index was low to the streptococcus. The injection of a vaccine made from three strains of streptococci produced no alteration in the local condition, except that the pain was worse and there was greater stiffness immediately after the injections. The discharge from the ear practically ceased, but this may have been in consequence of careful treatment at the hands of an aurist.

Case XVI. Miss L., thirty-five years. Chronic progressive polyarthritis. The patient has been more or less constantly afflicted for five years with painful, stiff joints, particularly the knees, wrists, elbows and ankles. The symptoms were not very acute at the time she came under observation. She had had two very badly infected tonsils, and they were both removed; she had also had acute sinus inflammation. Her index was determined to be low to the streptococcus and also to Schüler's organism, and she was given faithfully for several months a vaccine made from a triple streptococcus culture. She also received a number of inoculations with a vaccine made from Schüler's organism. Neither of these produced any permanent effect. At times she, as well as several other patients, seemed to receive some temporary benefit from the inoculation.

Case XVII. Mr. W., forty-five years. Infectious polyarthritis. For four or five years he has been gradually becoming stiffened in the joints of his knees and hands. One year ago he had an attack of pneumonia, during which the swelling disappeared entirely from his joints, and when he commenced to get about during convalescence, he felt that his arthritis had entirely disappeared. This immunity from former joint symptoms was only temporary, for within a few weeks all his old troubles had recurred, and since that time the knees had flexed to such a degree that walking was painful and difficult. The patient's index was taken for the staphylococcus, streptococcus, pneumococcus, colon bacillus, and Schüler's bacillus. His index was low to the pneumococcus and Schüler's bacillus. Vaccines

[11] R. Fayerweather: Am. Jour. Med. Sc., Dec., 1905.
[12] Schüler: Am. Jour. Med. Sc., Aug., 1906.

from these two organisms were repeatedly given, guided by the opsonic index, and no material improvement occurred, which could not be attributed to local and constitutional treatment coincidently carried out.

CASE XVIII. Mr. S., fifty-two years. Subacute phlegmon. Two years ago, while in Egypt, had a very acute phlegmon of the cheek, for which he was operated upon in Cairo, and had at the same time very large and often repeated inoculations of antistreptococcic serum. Since then, in various parts of his body, never in any joint, but usually in close proximity to some large articulation, he has had more or less subacute phlegmons. One of these, close to the elbow joint, was incised and a pure culture of the staphylococcus aureus was obtained. From this culture a vaccine was made and the patient was given several inoculations of this vaccine without any appreciable benefit.

The next 2 patients had intermittent hydrops.

CASE XIX. Mr. R., thirty-six years. Intermittent hydrops. Psoriasis. For seven years has had at irregular intervals an intermittent swelling in both knees and both ankles. Associated with this condition has been a very general psoriasis. When, as has happened on several occasions, he has had freedom from joint symptoms for six months at a time, he has also been entirely free from psoriasis. The knees have caused him the greatest inconvenience. The right one has been the more swollen and has had a five-day interval between attacks. The cycle for the ankles was not as clearly defined and he had never taken the trouble to determine it. The capsular swelling in the knees wholly disappeared. The right knee-joint was subjected to an arthrotomy with the hope that the cycle might be broken up. A culture taken from the interior of the joint gave the staphylococcus, which seemed a peculiar bacteriologic finding, but a vaccine was made from the culture and was regularly administered. For three months the operated knee showed no signs of an intermittent swelling. The left knee during this period was less inclined to swell, but did so to some extent. At the end of this interval the right (operated) knee returned to its cyclic distention, though the enlargement has not been as great as before. Observations upon the opsonic index at first showed that it was low to the staphylococcus, but later on the streptococcus seemed to be the organism which showed a low index, and accordingly a streptococcus vaccine was substituted, but without any alteration in progress of the trouble.

CASE XX. Miss S., thirty years. Intermittent hydrops. Both knees have swollen alternately every seven days for over two years. Two days were required for the swelling to attain its maximum and recede. The swelling caused a little pain for a few hours, but chiefly inconvenience from the enlargement. Her serum was tested and found to be low to the streptococcus. A vaccine was injected regularly for some time, but not carefully watched with opsonic tests. The patient has been taking Fowler's solution alternating with quinine during this entire period. There have been two intervals of two weeks each when there was no appreciable swelling in either joint, but this has occurred before under other treatment and no treatment. The amount of swelling is decidedly less, though except for the two intervals cited, there has been no intermission of the regular cycle.

Discouraging as these cases are, looked at from the clinical point of view, it must be remembered that we have been applying a new method, the shortcomings of which are not at present wholly understood. Circumstances have sometimes existed making it impossible that some of the conditions imposed by laboratory investigators could be carried out. It may be that cases have been treated with vaccines made from organisms having no possible kinship to the organisms originally present in the patient, though the opsonic findings have pointed that way. Again it may be possible that some of the conditions treated were not originally caused by an infective agent. These and many other obstacles stand in the way of drawing conclusions from the results of the first year's clinical experience. A good many more cases were treated and tested than have been recorded here, but those selected for report were chosen because they covered the types of cases most satisfactorily. It would have been possible to select a group, perhaps an equally large one, where the conformity of the opsonic and clinical findings would have been entirely favorable to this new method of study. So in the matter of treatment, typical opsonic charts might have been exhibited corresponding to remarkable degrees of clinical improvement. The writer believes the danger of expecting too much from an untried method is greater than that of expecting too little, and is desirous of encouraging the continuance of trials now going on in the laboratory provided they can be checked by unbiased clinical observation.

DISCUSSION.

DR. L. S. MEDALIA, of Boston: I wish to say that some of the cases that Dr. Painter has mentioned have not been under treatment since the first of February. There are a few cases at the Good Samaritan which have been treated up to date, but those at the Carney Hospital have not been followed up since February 1.

I would emphasize the fact that this treatment has to be carefully and energetically carried out, for the conclusions drawn from those not followed up properly have been unsatisfactory.

THE SERUM TREATMENT OF EXOPHTHALMIC GOITER. A REVIEW OF THE LITERATURE.

BY FRANK S. BULKELEY, M.D., AYER, MASS.

UPON looking over the available literature on exophthalmic goiter, one is at once struck by the fact that drugs having very different actions are, or have been said to be, of benefit. Much of the treatment has been purely symptomatic, perhaps necessarily so. It is hard to see how many of the drugs used could have any influence on the causative factor in the trouble, and their main, if not only, value seems to have been in palliating certain symptoms. This leads us to ascribe the reported cures to general hygiene and the tendency to spontaneous recovery that certain cases show. In a general way such drugs may be divided into four classes: "Nerve sedatives," "vascular sedatives" and cardiac stimulants,

gastro-intestinal antiseptics and laxatives, and general tonics, so-called. Many of the results seem, in the light of more recent investigations, mere coincidence, and the fact that spontaneous recovery occurs at times lends strength to this view. Among the various drugs used, belladonna, ergot, intestinal antiseptics and laxatives of various sorts, strophanthus, digitalis, phosphorus, sodium salicylate, bromides, iron and quinine hydrobromate are, perhaps, the most generally used. Forchheimer speaks very highly of the last named drug, and many reports favorable to its use are on record.

The first signs of an attempt at a specific treatment were seen in the use of milk and blood serum from thyroidectomized animals. This has been followed by an attempt to obtain a specific antitoxin by Rogers and Beebe of New York. They report 90 cases, of which 23 were pronounced cured, 52 improved, 11 were not benefited, and 4 died. The cases were of all grades and at all stages. Some of those reported as benefited may later prove to be cured, and some of those not benefited may show improvement. The originators of the serum state that the chronic toxic cases are the most resistant. The dosage and possible limitations of the serum do not seem to be generally understood, and for further details one should consult the original articles.[24] Their serum is a very different thing from the sera prepared by the various manufacturers, and calls for separate consideration. I have had no experience with it, and shall not include it in this review. I have collected the following cases from the available literature:

Enriques.[1] Reports in 1895. Nine cases treated with serum from a thyroidectomized dog. Exophthalmos and all other symptoms relieved. A further report in 1903 says end results are disappointing.

Lanz.[2] Six cases treated with milk from a thyroidectomized goat. One case treated two weeks. Pulse before, 90; after, 70. Goiter less, and general symptoms much improved. One case treated nine weeks. Pulse before, 134; after, 88. Goiter less and all symptoms benefited. One case treated three months. Pulse before, 150; after, 80. Goiter less. Feels completely cured. One case treated three months. Pulse before, 130; after, 80. All symptoms benefited. Previously bedridden, now able to work. One case treated three months. Pulse before, 130; after, 60. Later went through pregnancy and labor without trouble. One case treated three months with great improvement.

Burghart.[3] Three cases treated with the blood of a myxedema patient. Gain in weight and remission of all symptoms.

Moebius.[4] Two cases treated with Moebius' serum. Marked alleviation of symptoms in both cases.

Schultes.[5] One case of three years' duration treated with Moebius' serum for six weeks. Pulse before, 240; after, 90. General and mental symptoms much improved.

Goebel.[6] One case of ten years' duration treated a few weeks with milk from a thyroidectomized goat. Previously bedridden, now able to walk a mile without fatigue.

Kuhneman.[7] One case of six weeks' duration treated with rodagen for one month. Pulse before, 140, after, 90. All symptoms gone, gained twelve pounds. Reported later as completely cured.

Murray.[8] Two cases treated with Murray's serum. Moderately good results in both cases but is not sure it was due to serum.

Thirniger.[9] Two cases treated with Moebius' serum. Both benefited. One, an acute case of five days' duration, apparently saved from death by two weeks' treatment.

Hempel.[10] One case of six weeks' duration treated with Moebius' serum for one month. Pulse before, 180; after, 90. Total of 90 G. serum used. Patient satisfied with her condition four months after treatment was stopped.

Moussu.[11] One case treated with parathyroids of a cow. Gained, but died later of tuberculosis.

Macullum.[12] One case treated with parathyroids of a cow with no result.

Christian. Eighteen cases treated with thyroidectin. All considerably benefited.

Kuh.[14] Ten cases treated with thyroidectin, and one with Moebius' serum. "An excellent palliative but am not certain of permanency of results." All symptoms rapidly improved. In one severe case patient has had no symptoms for two and a half years.

Mix.[14] Two cases treated for a long time with small doses, Moebius' serum. Both are at work with a complete disappearance of all symptoms.

Vanderhoof.[15] Two cases treated two months with thyroidectin. One able to work as hard as ever without trouble. One much improved, but not able to work at time of report.

Waterman.[16] Five cases treated with Moebius' serum. Two cured, free from all symptoms for six and eighteen months. Two benefited, and one not improved.

Rydel.[17] Four cases treated with rodagen with benefit, but is not sure it is due to serum.

Siegel and Ewald.[18] Four cases treated with rodagen with no result.

Adams.[19] One case of three years' duration treated with Moebius' serum for one month. Previously bedridden, but has been at work six months without symptoms.

Kirnberger.[20] Two cases treated with rodagen with disappearance of all symptoms and general improvement.

Peters.[21] One case treated with Moebius' serum with good results.

E. Von Leyden.[22] Three cases treated with Moebius' serum. One case of three years' duration. Pulse before, 96; after, 80. Marked general improvement. One case of two years' duration feels much better. One case cured by eighteen months' treatment.

Sainton. Three cases treated with blood of a thyroidectomized sheep. One case treated eight months. Pulse before, 115; after, 80. "Patient transformed into new and healthy woman."

Number of cases.	Reported by	Duration of disease.	Length of treatment.	Serum used.	Pulse before.	Pulse after.	General symptoms.	Benefited	Not benefited	Goiter	Remarks.
3	Thirniger, 1905			Moebius'			Benefited	3			One, an acute case of five days' duration, apparently saved from death.
1	Hempel, 1905	6 weeks	4 weeks	Moebius'	180	96	Benefited	1		Less	Patient satisfied with her condition four months after treatment.
18	Christian, 1905			Thyroidectin			Benefited	18			
11	Kuh, 1905			10 Thyroidectin, 1 Moebius'			Benefited	11			No symptoms two and a half years after treatment in 1 case.
4	Rydel, 1905			Rodagen			Benefited	4			Not sure it is due to serum.
2	Mix, 1905		A long time	Moebius'			Benefited	2			Possible cures.
4	Siegel and Ewald, 1905		3 months	Rodagen					4		
1	Adams, 1903	3 years	1 month	Moebius'			Benefited	1			
9	Enriques, 1895 and 1903			Serum of thyroidectomized dog			Benefited	9			End results in 1903 said to be disappointing.
6	Lanz, 1899		2 weeks	Serum of thyroidectomized goat	90	70	Benefited			Less	Five possible cures.
	1903		9 weeks		134	88	Benefited			Less	
		3 months	3 months		130	80	Benefited			Less	
			3 months		150	80	Benefited	6		Less	
			3 months		130	60	Benefited			?	
		1 year	3 months		?	?	Benefited			?	
3	Burghart, 1899			Blood of myxedema patient			Benefited	3			Gain in weight in all cases.
2	Moebius, 1901	4 years	52 days	Moebius'	134	110	Benefited	2			
		2 years	3 months		120	90					
1	Schultes, 1902	3 years	6 weeks	Moebius'	240	90	Benefited	1			
1	Goebel, 1902	10 years	A few weeks	Thyroidectomized goat's milk			Benefited	1		Less	
1	Kuhneman, 1904	6 weeks	4 weeks	Rodagen	140	90	Benefited	1		Less	Reported later as completely cured.

2	Murray, 1904	18 months 5 years	2 months 3 weeks	Murray's			Benefited	2			Not sure it is due to serum.
2	Kirnberger, 1903			Rodagen			Benefited	2			
1	Peters, 1905			Moebius'			Benefited	1			
3	E. Von Leyden, 1904	3 years 2 years 1½ years	 1½ years	Moebius'	96	80	Benefited Benefited Benefited	3			One reported cured by eighteen months' treatment.
3	Sainton, 1904	 3 years	8 months 6 months 3 weeks	Moebius'	115 120 134	80 100 84	Benefited Benefited Benefited	3			One case reported "cured, but has to continue serum."
2	Vanderhoof, 1906		2 months 2 months	Thyroidectin	140 120	95 ?	Benefited Benefited	2			One at work without symptoms.
5	Waterman, 1906			Moebius'			Benefited	4	1	Less	Two cured, two benefited, one not benefited.
1	Bulkeley, 1907	About 8 months	About 4 months with serum	Moebius' thyroidectin	100 to 140	70 to 85	Apparently aggravated		1		Patient greatly improved, but quite certain it is not due to sera, as they seemed to aggravate symptoms.
86		Totals,						80	6		Sixteen possible cures judging from data given.
				PARATHYROIDS.							
1	Moussu, 1904							1			Gained, but died later of tuberculosis.
1	Macullum, 1905								1		
4	Walsh, 1905							2	2		One severe case not benefited, 2 mild cases apparently benefited, 1 severe case aggravated. Not certain there was no thyroid admixture.

One case treated six months. Pulse before, 120; after, 100. Great improvement, but has to continue serum. One case of three years' duration treated three weeks. Pulse before, 134; after, 84. "Cured but has to continue serum."

Walsh.[23] Four cases treated with parathyroids of a cow. In two mild cases seemed to have a good effect. One severe case not benefited, and symptoms aggravated in one case. Not certain that substance used was free from thyroid admixture.

Billings.[20] Reports 12 cases treated with thyroidectin with varying results, but in no case did he secure the favorable results recorded elsewhere. In 1 case Moebius' serum and quinine hydrobromate were used, with resulting steady and continuous improvement.

In the majority of the cases reported not enough detail is given to allow one to judge of the probability of cure, or of the permanency of results. One case reported by Lanz was able to go through pregnancy and labor without trouble. In view of the tendency to increased thyroid secretion in pregnancy, this may, perhaps, be called a cure, although we must admit that such a tendency is not constant. Lanz reports 3 other cases that seem possible cures. Schultes, Goebel and Kuhneman report cases that might be considered permanently cured. One of Hempel's patients was satisfied with her condition four months after treatment was stopped. Kuh reports that one patient is free from symptoms two and a half years after stopping treatment. Mix, 2 possible cures. Waterman, 2 cures of six and eighteen months' duration. Sainton, 1 case cured. Von Leyden, a case cured by eighteen months' treatment, etc. Nearly all the writers quoted report improvement, and we may, perhaps, be warranted in accepting the statement made by Elsner and Wiseman [25] that the palliative action of the serum seems certain and a cure may be possible. They say, "Improvement usually begins within seven days, and that if there is no improvement in three or four weeks the chances are against ultimate benefit. Tachycardia, tremor and precordial distress show the greatest improvement. Cases without marked goiter, with slight tremor and exophthalmos yield most readily. There usually is an increase in weight. Continued use of the serum may be necessary." My experience with the serum is too limited to allow me to venture a decided statement, but I cannot agree that the palliative action of the serum is certain, however probable it may seem. Osborne [26] states that there is no doubt that the proper treatment of exophthalmic goiter is by antithyroid preparations, but he is not certain whether the treatment can be pushed or prolonged with safety. The assertion has been made that the sera occupy the same relation to exophthalmic goiter that thyroid extract does to myxedema, but such a statement can hardly be accepted on the evidence at hand. It seems as if the writers used the term cured in a very different way. Some do not report cure where it seems probable; others claim it where only palliation of symptoms seems certain. It is desirable that a cure in this condition be more exactly defined.

A contrast of the different sera offers little of value. Two observers report 4 cases in which rodagen was useless, although other reports are favorable to it. The other sera seem to have given uniformly good palliative effects. Practically all the writers quoted report improvement, far too many to have it seem coincidence. It seems as if the treatment is at least worthy of a trial in every case. An estimate of the cures from the data given is very difficult, and I shall attempt no such estimate.

I have made use of the sera in one case with very doubtful results. In this case, goiter was slight or absent, tachycardia and tremor well marked, exophthalmos absent, and the other symptoms those usual in such cases. The thyroid was palpable and visible, but at the same time was no larger than is common in many healthy women. Thyroidectin was used in increasing doses. For a time it seemed to be of some benefit but this effect was soon lost, in fact it seemed to aggravate the symptoms. Later, Moebius' serum was tried with practically the same results. Quinine hydrobromate was used for about five months, in doses just under that necessary to produce cinchonism. It seemed to give positive results. Although the amount of bromine in this preparation is small, a daily dosage of 16 gr. was sufficient to cause a well marked bromic acne in this case. Because of the small amount of bromine in the drug it did not seem probable that the bromide action could be the main factor giving relief. For this reason quinine valerianate was substituted, and while it was used for only a short time, the results obtained seemed to equal those from the hydrobromate. The bromic acne produced soon disappeared after the drug was stopped. At present, while it is too early to make a positive statement of results, the patient has gained in weight, has made little or no complaint of tachycardia for six months, and has little or no tremor. Her main complaint is occasional undue fatigue from very ordinary causes, which seems to be growing less marked. Some flatulency, and a tendency to insomnia and anorexia are about the only other symptoms left, and she has been subject to the two latter ones for years. She is able to go about a great deal with no trouble, and does all her household work. Pulse records taken at random during the past six months have been from 70 to 85, although it is possible that higher records could have been obtained. During the height of the trouble a record of 100 was the rule, and 120 to 140 was no exception. She has had no medicine for about six months. Rogers and Beebe state that some of their cases showed no improvement at the usual period for it to commence, but that it came on after a long interval. It may be that this was the case in the present instance, but the nature of the two remedies and their probable mode of action are so different that it seems improbable. It also seems im-

possible to say that any delayed improvement was not due to a tendency to spontaneous recovery, or to some other means of treatment. I certainly can trace no benefit directly to the serum in this case.

In arranging the cases in tabular form I have included all cases under the terms "benefited," or "not benefited." The probability, or otherwise, of cure, I leave to the individual reader to determine. Thirteen cases reported by Billings are not included in the summary as the details given are very scanty, and no distinct statement of failure to benefit, or of improvement is made.

The tabulated cases appear on pages 28 and 29.

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SYPHILIS AND GONORRHEA IN INTERNAL MEDICINE. *

BY ROBERT N. WILLSON, M.D., PHILADELPHIA.

Of all the economic problems with which this and other nations must deal, none exceeds in difficulty that of venereal disease. Syphilis and gonorrhea have been reaching out for the vitals of more than one race, and have laid hands heavily on the civilized world. Venereal disease forms a serious social, as well as medical, dilemma. To the necessity of applying itself to this dilemma, the public is just opening its eyes.

One needs to look back only a few years to recall a period in which venereal disease was treated as a matter of course, and often as a half joke, by the general practitioner, and if not by him by the druggist, and at a still earlier time, by the barber-at-large. The profession has grown up, as it were, with venereal disease in its midst, unwillingly conscious of the presence of an unwelcome companion, and yet finding its acquaintance more and more intimately thrust upon it as time has flown. The doctor has known syphilis and gonorrhea as the dog knows his enemy the flea, but no more intelligently. Along with the rest of humanity he classed these diseases as necessary evils to be borne with stoicism and to be disregarded when possible, because too closely bound up with the recognized pleasure of life to admit of a change. The youngest of us can remember the advice of our medical seniors to enjoy our wild oats, because only in such a way could the experience necessary to a doctor be gained. No word was uttered regarding injuries that might accrue to the individual and his home.

Within a few years the medical profession has been learning that syphilis and gonorrhea are factors to be seriously reckoned with. The possibility of the influence of syphilis is considered in every diagnosis, and in the planning of every treatment. Its earmarks stand out upon the highborn and the lowly, the king and his subject, from the grandfather to the third generation. The doctor is to-day hurrying to stem a tide which years ago might have been turned with a finger. He pays no small price for this privilege of serving the people, as is seen in the record of professional accidents that annually result in the syphilization of not a few members of his calling. If there were no other incentive, the danger to which he is daily exposed would commit him to a position in the front line of the battle, now to be waged against a common enemy. The doctor is trusted by the public to a degree that is shared by no other public servant. The laity must simply remind him and keep him faithful to this trust by its interest and encouragement. In one form or another syphilis or gonorrhea enters at some time nearly every home. Their ultimate consequences account for a morbidity and mortality that will exceed that of any given class of disease. The plain physician, the general practitioner, alone knows the full sorrow of venereal infection in the home. He has not realized that the public has for some time been ready for the facts which he has kept in his bosom. Medical literature is full of the material that will rouse the public to action. The people stand at the doctor's door, with hand at ear. What will conservatism and professional ethics allow him to say?

A hurried glance at the literature of syphilis and gonorrhea published during the period 1903 to 1906 inclusive yields the following interesting facts. Four hundred and seventy-five articles have appeared in the leading medical journals, dealing with syphilis alone. The average number of cases of syphilis reported in this series was ten per article; but many included the reports of from 500 to 1,000, and few recorded less than 5. As each instance of syphilitic infection represented at least one other as its cause, this library deals with not less than 5,000 public reports of cases of syphilis, and more much likely 50,000, if the full count were made. During the same period 176 articles appeared upon gonorrhea, a disease which has been discussed, until there is little to say beyond the fact that the profession realizes with each new year how little real knowledge it has upon the subject. The danger is the only settled and established factor, other than the causal germ. Syphilis is at most times a purely medical condition. Only when the internal organs are seriously involved does the syphilitic come for a moment under the surgeon's care. Gonorrhea, on the other hand, has been considered

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almost exclusively a surgical condition; and only the second glance of one who studies the ramifications of the disease determines how far into pure medicine it may wind its way.

Let us consider, very briefly, these two conditions from the standpoint of internal medicine and the public.

SYPHILIS.

What medical conditions grow out of, and what is the *natural* outcome of, this disease? Probably if every case of syphilis were isolated and treated by judicious medication and overfeeding in the fresh air, after the manner of tuberculosis, the disease could be stamped out within a few generations. Comparatively few cases are treated thoroughly, and many not at all; and, worst of all, isolation seems neither practicable nor promising of the best results. Prevention seems to be the only satisfactory measure. Every specialist begotten by the medical profession is supplied with material for study. Arteries become hard and lose their elastic and muscular coats. The brain, as a consequence of the arterial calcification, either receives too little blood supply, or a vessel ruptures, and the overamount produces pressure and an apoplexy. The internal organs are sclerosed, some break down into gummata, sclerosis takes place in the liver and spleen, chronic Bright's disease, gastric tumor (gumma), may all be occasional occurrences in the course of syphilis.

The dermatologist notes every variety of skin eruption from a simple erythema to a tubercular syphilide. The orthopedist sees Pott's disease as typical as that caused by tuberculosis; also rickets, and its consequences, and all forms of bone disease.

The ophthalmologist treats keratitis, iritis, choroiditis, optic nerve disease, disease of the lachrymal sac and even the primary sore. It may be interesting to digress long enough to quote in this connection a case reported in 1905 by de la Roche. A young woman of good family consulted an ophthalmologist for a sore upon her eye. He found a typical chancre on her left lower lid, and later observed the symptoms of constitutional syphilis. The woman was a bride who, on her wedding trip, developed a sty. A chambermaid offered to cure it by rubbing, and used in the process her finger, moistened with saliva. The result was the syphilitic infection of a clean woman, and the establishment of a new focus for the spread of the disease.

Reber noted the fact in 1904 that such a primary sore is by no means infrequent, as the result of the application of the tongue to the eye to remove a foreign body, — a common practice among the lower classes. Blaschko reports the cases of twelve doctors seen in ten years, infected in their professional work with syphilis, most of them upon the hand or finger.

The specialist on the stomach will tell you that syphilis may cause any gastric picture, from that of round ulcer to carcinoma. Hayem reports four typical cases of tertiary syphilis of the stomach as follows: Case I simulated a gastric ulcer to such an extent that this diagnosis was made. Case II seemed to be one of benign pyloric stenosis. Case III a tumor in or near the pylorus. Case IV a deceptive simulation of cancerous stenosis. One of these patients was sixty years old, and looked as if he were in cancerous cachexia; but gave a history of chancre forty years before, and recovered on antispecific treatment.

Margulies describes a case of kidney tumor in a woman of twenty-six years, which when opened up was manifestly of syphilitic origin. Wagner cites 14 cases of syphilitic Bright's disease. Quincke notes three interesting instances of abdominal syphilis, one showing a series of gummatous indurations in the cystic duct, and in the head of the pancreas; a second, presenting a gummatous mass pressing on the portal vein and biliary ducts; and, lastly, a mesenteric gumma that pressed upon the stomach, causing dilatation of that organ and stagnation of its contents.

Trinkler reports a case of syphilitic tumor of the pancreas, diagnosed and operated upon as probable cholecystitis.

Klemperer describes a number of cases of syphilitic disease of the liver. Riedel reports several cases of syphilis of the gall bladder, all operative, one of them a physician.

König cites numerous instances of syphilitic tumor of the liver. Von Düring deals with syphilitic aortitis, and states that syphilis has been demonstrated in 56% to 85% of the cases of aortic aneurysm on record. Aneurysm in youth (below fifty years) is nearly always the result of syphilis.

Goldfrank reports a case of multiple gummata of the heart with sudden death. Jones states that in his experience a syphilitic history more frequently precedes valvular lesions of the heart than does rheumatism.

Locomotor ataxia is more and more convincingly ascribed to syphilitic influence. Preobrazhensky reports the case of a child of twelve years with tabes. The mother was syphilitic and developed tabes at the same time with her son. Erb records 400 cases, of which 45% gave an unmistakable history of syphilis or chancre, and in the remainder syphilitic antecedents were probable in all but 2.8%. Erb states that of 600 educated men of the upper classes studied by him, 43.3% were absolutely free from venereal disease. Only 50% of the 600 had had gonorrhea! Adrian describes many cases of tabes in syphilis. Fournier gives his record of 112 cases of general paralysis, in which the date of the primary syphilitic sore is known. All belonged to the well-to-do class. The shortest interval before the onset of paralysis was three years; in the great majority it was ten years. In 223 cases of cerebral syphilis with hemiplegic onset, fully two thirds developed within five years of the primary infection. Nearly all gave a history of insufficient or no treatment. All authorities emphasize the lesson that every case of syphilis, especially those which are clinically light, should be treated energetically and persistently, and be watched for the first sign of

tabes; then again energetically treated as before. Also that every case of tabes should be studied for syphilis.

Pritchard cites cases of intracranial syphilis. Peter gives others with disease of the brain and cord. We have ourselves recently studied four cases of cerebrospinal syphilis, two of these in educated, well-to-do men.

Mettler writes of the neuroses due to syphilis; he has also reported cases of syphilitic chorea.

Muravieff and (elsewhere) Gowers describe syphilis of the central nervous system. Finally may be mentioned the fact that syphilis not infrequently involves the peripheral nerves, resulting in neuralgias, polyneuritis, or root neuritis. Usually the trigeminus is involved, and in company with it either the optic, facial, or oculomotor, or other of the cranial nerves. There seems, moreover, to be no doubt that syphilis predisposes to tuberculosis. Fraenkel, Klebs, Beck and many others have cited series of cases that support this view, which has been amply borne out by our own experience upon the wards of the Philadelphia Hospital.

Douty gives expression to the general opinion that 30% of the tuberculous are syphilitic.

Jones believes that the high mortality among the negroes is due to the syphilization of the race with tuberculosis superimposed. Few, if any, are cured of tuberculosis, even when under favorable surroundings.

Time and space remain for only a word regarding hereditary syphilis, the almost certain outcome of syphilitic parentage. Near Stockholm a sanatorium has been built for children suffering from congenital syphilis, in which, under proper care, many have been enabled to survive. As a rule the syphilitic child dies very early. If it survives it often is rachitic, often shows active bone affections, sometimes Hutchinson's triad of syphilitic teeth, keratitis and centrally impaired hearing. Sometimes the syphilis remains latent for months and even for years before manifesting its presence.

Lannelongue claims that Parrot's disease in the young and Paget's disease in adults and in the aged are both syphilis.

A number of writers, among them Etcheverer, cite cases that appear to suggest a predisposing relation between a syphilitic soil and cancer. He notes 13 cases of cancer following leucoplasia; and a still larger number that developed in syphilitic lesions of the mouth. He cites a number of cases reported by others.

Treatment need only be referred to at sufficient length to state that the tendency seems to be to follow the intensive, hypodermic method, injecting mercurial solutions deep into the gluteal muscle. With the discovery of the spirocheta pallida as the probable cause of syphilis Schaudinn has given us both welcome news and an additional incentive to treat the individual case intelligently and well. Not only have we in our possession the possible key to an effective cure, but the urgency of haste, now that we know the spirocheta to be present and virulent even in the tertiary stage.

Doutrelepont published four cases of tertiary syphilis, in each of which he found the spirocheta pallida. Rille and Vockerodt also found the organism in extragenital lesions nine years after infection. Many similar cases are already on record.

Metchnikoff, Neisser and others are now at work upon a series of inoculation experiments upon the various monkey genera. The transference of the disease to these animals is without difficulty and the infection has repeatedly been passed from one monkey to another.

The next advance will be toward, if not to, an immune serum. We have dwelt upon syphilis almost to the exclusion of gonorrhea for a distinct purpose, namely, that it might appear clear to every one that syphilis is a disease which insinuates itself into the lives of physicians and laymen from all sides, openly and in disguise, and in a wide distribution that will require years of effort and patience to conquer. Yet the task can be accomplished just as certainly as with smallpox, and as it will be with tuberculosis. A long step toward this end will have been taken in the discovery of the cause of the disease. An equally marked advance will be the arming of the people with the facts.

GONORRHEA.

A new teaching is also required for gonorrhea, to the effect that it is not merely a local infection of the urethra, but that in every case it is a systemic infection of the blood and lymphatic glands. In most cases, to be sure, the disease manifests its symptoms locally, either in the urethra, the vagina, the uterus, the eye, the rectum, or, much more rarely, the mouth, the nose, the ear, and other portions of the body.

Bull cites five instances of iridochoroiditis. Apetz cites one of gonorrheal ophthalmia, an autoinfection of the eye after six years of latency in the urethra. Kimball reports 8 cases of gonococcus pyemia in infants. Larson describes 2 cases of gonococcus abscess of the sternoclavicular articulation. McColgan and Cooper cite many instances of gonorrheal metastasis and pyemia. K. Flügel recites a series of 56 children with gonorrheal vulvo-vaginitis, in 20% of whom rectal infection had occurred.

L. Emmett Holt urges the stringent isolation and care of gonorrheal patients in children's institutions. In all its forms gonorrheal infection is difficult of control, but in an institution for children it is a scourge. Gonorrheal vaginitis is very frequent in such buildings, and only strict isolation and scrupulous care will prevent or subdue an epidemic.

Lowenburg relates the case of a four-year-old child who infected himself probably by handling the rags and clothes from the refuse boxes. There are not a few instances on record of infection in tiny children as the result of coitus with other children or with adults.

Helman reports a case of multiple periarthritis (gonorrheal) in a child inoculated through a skin wound; Krause notes two cases of gonococcus

sepsis, the gonococcus being obtained from the blood of the patient during life; Powers reports one of diffuse gonococcus infection of the entire upper extremity; and Salomon, a case with gonorrheal cutaneous ulcers. Gonorrheal ophthalmia is responsible for from 10% to 25% of the inmates of our blind asylums. The gonococcus surgery of the abdomen includes from 10% to 90% of all the pelvic suppurations in women, the figure varying with the operator. In the male a large part of the surgery of the genito-urinary tract can be traced to the gonococcus as a cause.

There remains simply the statement that the aorta, the smaller vessels, and the heart itself, are all subject to attack by the gonococcus. Eisendrath feels certain from his experience that urethral gonorrhea exerts a distinct influence predisposing the genito-urinary tract to tuberculosis. In both male and female, he says, gonorrhea prepares the soil for a later invasion by the tubercle bacillus.

In the face of the foregoing facts, would it not seem likely that when the public is thoroughly informed it will speedily alter the social conditions that led Joseph Taber Johnson to say only a year ago that "90% of all men acquire the disease." Even if we take exception to his large figure, as some of us will be inclined to do, the minimal percentage persists above 50%, and the consequent harm to the people in sickly women and incapacitated men, and in sterile men and women is sufficiently striking to engage the attention of those who are disposed to protect themselves and their neighbors. Neither syphilis nor gonorrhea is a desirable public asset. In due time, through organic disease, through sterility of both sexes, or through fetal death, they will decimate the hardiest race. Though both are curable under favorable conditions, many unnecessary infections may, and often do, take place while one is being cured. Many cases fail of cure. The ultimate result at such a rate is a retrograde rather than an advance. There is only one radical cure, and only one method of procedure will avail. If the medical profession will inform the laity fully and freely as to the facts in the case, the work will be in the hands of the people from that time forward. There is little doubt that they will rise to the occasion. Their co-operation is indispensable to their own salvation and nothing short of thorough accomplishment should be their aim.

ANATOMIC AND PHYSIOLOGIC REST OF THE PERITONEUM IN PERITONITIS.

BY BYRON ROBINSON, B.S., M.D., CHICAGO.

SINCE I was a pupil of the late Mr. Lawson Tait, one of the greatest surgical geniuses of his day, I have studied and practiced the subject of *anatomic and physiologic rest* of the abdominal viscera, for fifteen years. Mr. Tait was profoundly suggestive, teaching rather by example and practice than by theory. I learned from the brainy Tait the inestimable value of anatomic rest and physiologic rest in abdominal disease, *i. e.*, practically anatomic and physiologic rest of the *peritoneum.*

Anatomic rest is maximum quietude of skeletal or voluntary muscles. A voluntary, motionless state is secured by rest in bed, not rising for defecation or urination.

Physiologic rest is minimum visceral function. Minimum visceral function is controlled by means of fluid, food, mental quietude and therapeusis. The essential factor in minimum visceral function is peristalsis. Visceral peristalsis is an executor of pain and a distributor of sepsis. The method of treatment for abdominal pain by anatomic and physiologic rest was especially advocated by the distinguished English physician, Wilkes, in 1865 (living at present), continued by the famous American, Alonzo Clark (1807–1887), by the "opium splint," and established forever in 1888 by one of the greatest surgical geniuses of his age — Lawson Tait (1845–1900). Mr. Tait did not secure his success from so-called antiseptic surgery, nor from even present methods of aseptic surgery, for I have watched him do successful abdominal sections on returning from his yachting expeditions, where he delighted to be his own cook, with anything but aseptic hands, and by washing them in soap and water two minutes or less, was ready to do the section.

Tait's success lay in anatomic and physiologic rest with thorough visceral drainage, especially of the tractus intestinalis. He used to remark to his few pupils that the patient should have the bowels so thoroughly evacuated that the intestines were like slippery ribbons when the abdomen was opened. When the intestines are contracted to the shape of slippery ribbons they are in a state of physiologic rest. Besides, Tait kept the bowels in a state of physiologic rest by allowing no fluid or food per mouth for forty-eight hours — a cruel method — after the section. Practically, the patient was without food for four days so far as any action on the bowels was concerned.

Anatomic rest was secured by rest in bed — quiet bones and muscles. On the third day, Mr. Tait again drained the tractus intestinalis with magnesium sulphate and mild chloride. This gave the bowels another physiologic rest, after the visceral drainage. For some fifteen years, I have been following the method of anatomic and physiologic rest in the inflammatory and operative diseases of the abdomen. I am induced to write this on account of the slight attention paid to the subject of anatomic and physiologic rest by so many general practitioners and general surgeons.

First and foremost, the most striking success in anatomic and physiologic rest is shown in septic abortions. Even as short a time as ten years ago, it was a general treatment in some hospitals in septic abortion to curette vigorously, irrigate and pack the uterus immediately on arrival at the hospital and follow this by vigorous catharsis. I learned fifteen years ago from a considerable practice in gynecology and obstetrics, that

it was a very fatal practice. In fact, when at that time I saw a case of abortion with temperature 105°, pulse 130 and severe tympanitis, I generally considered the prognosis was fatal with the then active treatment. For the past dozen years in abortion cases I have assumed the treatment I learned from Lawson Tait, *i. e.*, that of anatomic and physiologic rest. When the abortion patient arrived at the hospital, septic, with a temperature of 105°, pulse 120 to 140, with severe tympanites, she is placed on her back in bed, she is not allowed to rise for stool or urination (anatomic rest). No food or fluid is allowed per mouth; she is given a hypodermic of morphine for pain, and warm normal salt solution is injected into the rectum to abate thirst (physiologic rest). Her friends fight against this alleged cruel and unusual punishment, but the hospital should get control of the patients by soon parting with the friends. It is astonishing what a day and a night's anatomic and physiologic rest will do for a septic aborted patient. She soon becomes easier under rest. The small doses of opium aid to check the pain which is wild peristalsis. The tympanites subside. In a few days one finds the peritoneal exudate still there, but in a couple of weeks, if abscess formation does not occur, they begin to subside, absorb. Put the intestines at rest and they will not distribute the sepsis over the abdominal cavity by wild and irregular peristalsis. Under anatomic and physiologic rest, seldom does one lose an abortion patient.

In the second ten years of my practice I have saved double the number of septic abortions by means of anatomic and physiologic rest, in comparison to the so-called active treatment.

I am aware of no septic infectious process where the anatomic and physiologic rest method will demonstrate its utility as well as in septic abortions. Again, for about ten years, an able surgeon, whom I would meet almost daily, has tried to convince me that hot, moist compresses saved him from amputating many limbs. Hot, moist compresses with him are a hobby, and I must say that he saves many terribly septic limbs and fingers. However, I think this good surgeon is mistaking hot, moist compresses for the favorable therapeusis, — anatomic and physiologic rest. When a septic limb is put to anatomic rest, the bone is immobile. The muscles lie quietly, no contractions and relaxations impel or force the lymph stream proximalward, conveying sepsis with it. The blood stream is physiologically quiet, moving at a minimum rate. In short, the sepsis in the infected limb is being circumscribed by anatomic and physiologic rest, and not by hot and moist dressings. He also claims that the hot, moist dressings must be antiseptic, as bichloride of mercury or alcohol. I have argued with this surgeon that it was the anatomic and physiologic rest that produces the favorable effect in the cases which he thought was due to hot, moist dressings. In perityphlitis, the most treacherous and dangerous of abdominal diseases, — dangerous because it kills, and treacherous because its capricious course cannot be prognosed, — anatomic and physiologic rest is equally favorable; but it fails in some cases where the sepsis has been excessively distributed by enteronic peristalsis, and therefore many of my colleagues condemn it.

It is an error to condemn anatomic and physiologic rest in perityphlitis without extensive trial, for it requires the highest skill and abundant experience to form a correct judgment in many cases of perityphlitis as to the appropriate time to operate. For example, I find considerable opposition among physicians in consultation in cases of perityphlitis in regard to the administration of cathartics in acute and incipient cases. I argue with them that a cathartic in acute perityphlitis is about the worst form of malpractice. It makes the perityphlitis worse by distributing the sepsis over new areas of peritoneum and increases peristalsis, and thus increasing the pain while it gives the patient no relief from his perityphlitis. Such a practitioner mistakes the result of the perityphlitis (peritonitis) for perityphlitis itself. What the perityphlitis patient requires is anatomic and physiologic rest, no food and minimum quantities of fluid per mouth; however, ample injections of normal salt solution per rectum to control thirst, and rather opium to quiet the pain, until when? Until recovery, or until he is ready for an operation in a stage as quiescent as possible. During twenty-five years of practice I have been infected in the fingers and hands about ten times. If I worked with the hand with the septic finger, all day, at night it was worse; it throbbed, ached and became swollen. If I placed the hand in a sling — semi-anatomic and physiologic rest — it would improve, but, with a night's anatomic and physiologic rest, it was in a favorable condition in the morning. We can save large numbers of patients from dangerous and unsatisfactory operations by anatomic and physiologic rest. They can be bridged so that operations will not be required during severe local and general sepsis.

Physiologic rest consists of minimum function of viscera. When one considers that every abdominal visceral tract — intestinalis, urinarius, vascularis, lymphaticus, genitalis, nervosus — possesses the four common functions of sensation, absorption, secretion, peristalsis, and all the visceral tracts are connected with the peritoneum, it becomes evident that valuable aid may be rendered the patient by controlling the visceral functions. The four great functions (peristalsis, absorption, secretion, sensation) of the tractus intestinalis, *e. g.*, are practically produced and maintained by food and fluid. In cases of acute peritonitis, no fluid or food should pass per os. All required fluid should be administered by means of a fountain syringe, by means of slow, drop by drop, rectal irrigation. By this method all visceral peristalsis is diminished, and pain subsides. Intestinal as well as genital peristalsis distributes sepsis. The two visceral tracts which should pursue maximum activity in peritoneal disease are the tractus vascularis and tractus urinarius. Both the vascular and urinary tracts may be treated alike effectually by the same method,

viz.: gradual, slow, rectal irrigation with normal salt solution — 8 oz. per hour.

This lends volume, that is, vigorous peristalsis, to the vascular system and forces abundant elimination through the kidneys. The peristalsis of both tractus urinarius and tractus vascularis are vigorous, yet neither practically disturbs the peritoneum sufficient to distribute sepsis. There are few diseases which are controlled so effectually by anatomic and physiologic rest as peritonitis. The army of leucocytes of the peritoneum have almost plenipotentiary power in: (1), imprisoning, *i. e.*, building barriers of peritoneal exudates; (2), digesting, *i. e.*, destroying, and (3), sterilizing, *i. e.*, isolating, bacteria if the peritoneum be placed in a peritoneal splint, or rather in a state of anatomic and physiologic rest. The general surgeon appears to realize that the inflamed joints demand anatomic and physiologic rest, but seldom does he apply the principles to a fractured (desquamated) peritoneum. However, it is not strange that the inestimable value of anatomic and physiologic rest is overlooked by both the general surgeon and practitioner, since practically nothing in the medical colleges is taught on the important subject of anatomic and physiologic rest. The modern physician is gone to seed on technic. Surgical technic is the wailing cry of the medical college instead of the grand principles of physiology and pathologic physiology. In abortions accompanied with peritonitis, the cruel and unusual punishment, the uselessness and the brutal fatality of the sharp curette within the uterus has been demonstrated a thousand times; but as a young practitioner remarked, even the gynecologic books herald little warning of its immediate or remote damages. Practically, the sharp curette should be used within the uterus for diagnostic purposes only. Vastly more patients would be saved in abortions and salpingitis, if the tractus genitalis was more frequently placed in anatomic and physiologic rest. Anatomic and physiologic rest presents a double-edged sword of utility, for it is not only the most effective and safe remedy to avoid dangerous operation, but it is the most effective and safe method to prepare the patient for safe operations.

External to the peritoneum, observe the value of anatomic rest in inflamed joints, spondylitis, fractures. That anatomic and physiologic rest aids in the formation of thrombosis and embolism, I doubt.

The great principles gained by anatomic and physiologic rest are: (1) the lymph stream, especially in the peritoneum, is slowed, the muscular action required to force it with sepsis in the general system being practically absent. (2) Pain is diminished by checking muscular action and especially peristalsis. (3) In peritonitis, peristalsis not only enhances the lymph stream, but mechanically distributes germs over extensive areas in the abdominal cavity. (4) Anatomic and physiologic rest aids to circumscribe infection and save the patient from operation and death. (5) Anatomic and physiologic rest is one of the most excellent therapeutic agents to prepare patients for safe and successful surgical procedures.

TARSAL INJURIES.

BY JOHN G. W. KNOWLTON, M.D., EXETER, N.H.

UNDER the head of injuries to the tarsus, the writer wishes to draw attention to simple, noncomminuted fractures without external wounds.

The above paragraph might as truly read, injuries to the tarsus which the patient considers and describes as a "very bad sprained ankle."

Of the seven (7) tarsal bones, this paper will deal only with the os calcis and astragalus, as the others seldom suffer injury except by severe crushing of the whole foot, when two or more bones are injured and usually in connection with an external wound.

The difficulty the writer experienced in the diagnosis and the importance of consulting the x-rays are the reasons for presenting these cases to the society.

SIMPLE FRACTURES OF THE OS CALCIS.

CASE I. The patient was a male, thirty-six years old. He is a carpenter. While at work, standing on a step ladder, it slipped, and the patient fell about eight feet, striking the floor on his right foot. He noticed considerable pain in his foot, but continued working for an hour. The patient was seen next day, complaining of a "sprained ankle." There was considerable swelling of the foot, especially of the posterior and external surfaces. Tenderness was marked over this area, but no bony deformity, no abnormal mobility, and no crepitus could be detected. A plaster bandage was applied and cut the same day.

For several days after the accident the conditions of the first examination prevailed. There was great discomfort when the bandage was removed, pain on motion, movement somewhat limited and considerable tenderness.

An x-ray examination was advised and made. The radiogram showed a fracture into the posterior surface of the os calcis about an inch long.

The plaster was removed and a new one applied, with the foot slightly flexed. At the end of six weeks there was a good callus and movement without pain. Crutches were continued two weeks longer.

CASE II. The patient was a linesman, who fell from a height of about twenty feet, striking the ground on his right heel. He was unable to work on account of pain and disability of function of the foot. He was seen a short time after the accident. There was considerable swelling and ecchymosis about the heel. Examination showed bony deformity, abnormal mobility and crepitus. The x-ray confirmed a diagnosis of simple fracture of the os calcis.

SIMPLE FRACTURE OF THE ASTRAGALUS.

CASE III. The patient was a male, seventeen years old, and weighing about one hundred and eighty pounds. While standing on the ground, watching an athletic contest, he became enthusiastic as one of his friends won an event, and throwing his cap in the air, he followed it, but he came down in a little hole. He did not fall. He felt a sudden pain in his left foot and, without assistance, hobbled to a carriage, about three hundred yards distance.

The patient was examined within an hour of the accident. He said he had sprained his ankle, and the foot did look like a sprain. There was very little swelling, so that the bony landmarks were prominent.

There was no bony deformity, abnormal mobility or crepitus. The whole surface of the ankle was tender.

No fracture was detected. A bandage was applied and crutches ordered. The following day the physical conditions were the same, with an increase of swelling and pain on motion. A plaster bandage was applied and cut the same day. On the third day after the accident, an x-ray examination showed a longitudinal fracture on the posterior and external surfaces of the astragalus, with slight separation. The tips of the malleoli were intact. Examination of the foot showed ecchymosis on the external surface. Slight tenderness over the point of the fracture.

Three weeks from the time of the accident the patient could move the ankle joint freely without pain; there was no tenderness over the seat of injury. X-ray showed beginning union and the bone in good position. At the end of six weeks the patient left, with a plaster bandage and crutches, which he continued for three weeks, the foot being moved each day.

Case IV. This patient, a boy of sixteen, injured his right foot Oct. 1, 1906, while jumping. At the time of the accident he was wearing spiked shoes and in the act of jumping caught the spikes of his left shoe into the skin above the right knee, throwing him on to his right foot. He could not bear his weight on his foot. It was very painful.

Physical examination showed two long superficial lacerated wounds above the right knee. All the bony landmarks of his ankle and foot were prominent. There was no abnormal mobility or crepitus. There was slight swelling below the external malleolus and the outer surface of the foot was generally tender. There was no apparent fracture. The foot was held in a pillow and side splints for three days, then a plaster bandage was applied. At the end of a week the foot showed a slight broadening of the malleoli, deep ecchymosis below and posterior to the tip of the external malleolus and exquisite tenderness on slight pressure posterior to the tip of the malleolus.

The patient was urged to have an x-ray examination, but he refused. A fresh plaster bandage was applied. The patient was told that he had a fracture of the astragalus and that it would be necessary for him to use crutches for at least four weeks. He then said that he wished he had had a picture taken.

The difficulty in the diagnosis of tarsal injuries arises from the anatomical arrangement of the bones.

The bones are small, firmly wedged together, held by and practically encased in very strong ligaments. The articulatory surfaces are covered with synovial membrane. The bones are classed anatomically as spongy bones, having the cancellous tissue surrounded by a thin shell of compact osseous tissue.

On account of this arrangement the bones are strong and seldom are injured. The usual seat of injury in the region of the ankle is higher up, about the malleoli of the fibula and tibia. The usual injury to the tarsus is a compound comminuted fracture of the bones.

A simple fracture, with or without a free fragment of only one bone, although not rare, still is uncommon. Such an injury is usually caused by a fall.

In three of the cases reported the apparent cause was slight and the resulting bony deformity, as far as one could feel, was *nil*. With the exception of tenderness, there were no physical signs of fracture. There was no free fragment of the bone, so abnormal mobility and crepitus were not detected. Under ether it might have been possible to manipulate the bones, so that abnormal mobility would have been detected, but even then it is doubtful if it would have been possible to find out the exact location of the fracture.

The usual history of such case is as reported: the patient injures the ankle in some simple way, it is very painful and, although he considers it a bad sprain, yet he expects the doctor to find out how bad the injury really is. A thorough examination is made, and although there is no apparent fracture, yet one hesitates to make a diagnosis of sprain.

Many times the only sign present to aid in the diagnosis of fracture is localized tenderness. But there is no doubt that continued tenderness in connection with injuries of the ankle is very suspicious of great injury, namely, of the bones rather than of the ligaments.

The symptoms of an uncomplicated sprain are swelling, pain on motion, ecchymosis and tenderness, all of which disappear quite rapidly. The symptoms of fracture include the above and, in addition, real deformity, abnormal mobility and crepitus. But there are fractures such as three of those brought to the attention of the society, that have only the character of sprains and no conclusive evidence of fracture. Even if we considered tenderness to be efficient evidence of fracture, are we not still in doubt as to the particular part of the bone affected, and as to the result to be expected? Under these conditions the x-ray opens a new door, for it will or will not confirm our diagnosis and render great assistance in our prognosis.

Before leaving the subject of tarsal diagnosis, mention should be made of the frequency with which the laity confounds all swellings in this region with sprained ankle. This is especially true of tubercular disease of the os calcis or astragalus. Recently a case came under the writer's observation of such a case, in which a tubercular abscess over the astragalus was about to break. Trauma of the bones and ligaments of the tarsus may result in tubercular disease, but the patient goes on for some time thinking it an uncomplicated sprain. If the diagnosis is not clear, then the x-ray will tell the story of the invasion of the tubercle bacilli by the picture of necrotic bone or thickened ligaments. Single fracture of the os calcis with a movable fragment is rather common and the diagnosis is usually easy.

The usual injury of the astragalus is a comminution, by being crushed between the lower end of the tibia and the os calcis. Dislocation of the astragalus is also rather common. The surgical deformity is so apparent that the subject will not be considered at length.

Cases of single simple fractures of the cuboid, scaphoid and cuneiform bones have been reported, but they are uncommon.

It is safe to say that all injuries occurring about the joints should be investigated by the x-ray, when they are at all obscure.

In the treatment of injuries of the tarsus, the

important procedure should be, first, hold the foot in the proper anatomical position, and second, encourage the use of crutches.

Immobilization can be maintained during the period of swelling by a firm pillow and side splints. Then a plaster bandage can be applied and as it gets loose a new one can take its place. After the first week the foot should be moved every second day.

Sprains should be treated according to the severity of the injury done to the ligaments. As a rule, a firm bandage during the period of swelling and massage afterwards is the treatment to be preferred. Crutches should be ordered and used from the time of the accident until full recovery in all injuries to the tarsus.

In the treatment of fractures, where there are no objective symptoms, the writer considers it advisable to have frequent recourse to the x-ray. Once, to really make the diagnosis, on which the initial treatment depends; another at the end of three weeks to show the position of the bone, and lastly, before the crutches are discontinued, in order to be sure that good bony union has taken place. Until that is assured the weight of the body should not be borne on the foot. Examination under an anesthetic will tell little, if anything, about the condition. Lastly, if separation of the bone continues and pain persists, or if there is comminution, then under an anesthetic, the bone should be wired or the fragments excised.

Medical Progress.

PROGRESS IN SURGERY.

BY J. G. MUMFORD, M.D., BOSTON.

RESULTS OF THE OPERATIVE TREATMENT OF BREAST CANCER.

THE results of cancer treatment concern all men — physicians and laymen alike — almost as much as do the results of tuberculosis treatment; and any authoritative pronouncement on either subject must be received with keen interest.

Last May, in Washington, the American Surgical Association devoted more than half a day to a symposium on the "End Results following Operations for Carcinoma of the Breast," and twelve men took part in the carefully prepared discussion. The verdict of such a jury must carry conviction to the American profession, and their verdict is substantially this: that, although we have greatly diminished the death-rate from breast cancer, during the past ten years, the end is not yet. Indeed, to one viewing candidly the situation, it must appear that surgery in the case of breast cancer, though frequently effective, is but a makeshift for those who go late to the surgeon, an attempt often desperate, to eliminate a terrible evil; but that it offers good hope of cure for those who go early. Doubtless, in the end, we must look to preventive medicine for the proper solution of this problem. However, while we look, surgery is winning its triumphs; the death-rate is being lowered, and we can hold out a far better prospect of restored health in the individual case than we could a few years ago.

Says Halsted: "It is especially true of breast cancer that the surgeon interested in furnishing the best statistics may in perfectly honorable ways provide them. The most conscientious man may refuse to operate on any but favorable cases, and, by performing an incomplete operation, exclude from his list of complete operations such bad ones as he finds himself operating upon. Or the pathologist on whom he relies may classify as carcinoma tumors which on microscopic examination show dangerous spots, *i. e.*, a few epithelial cells here and there escaping into the stroma." That gently derisive estimate of the situation was made at the opening of this cancer symposium. As one studies the papers which were read and published, one feels that Halsted's estimate may indeed be true.

Nevertheless, and in spite of the lack of a common point of departure, or any correlated method of constructing their statistics, the well-known surgeons who took part in the debate furnish us with interesting material, and ground for increasing confidence. Their estimates and opinions vary, and vary through astoundingly wide limits, — ranging from those of the optimist who reports an end-mortality of 19.5% to those of the sober skeptic who admits a mortality of 79.1%. Here are the published figures:

TABLE I.

SUMMARY.

	Cases.	Operative mortality.	End mortality.	Well after three years.
Halsted,	210	1.7%	57.7%	42.3%
Oliver,	35	—	62.85%	37.15%
Greenough,[1]	376	3.6%	79.1%	20.9%
Cabot,	42	—	78.1%	21.9%
Dennis,	(50)	—	(22)	(78%)
Willy Meyer,	80	1.25%	65.0%	35.0%
Pilcher,	18	—	72.0%	28.0%
Vander Veer,	87	—	19.54%	80.46%
Ochsner,	98	5.1%	45.0%	55.0%
Jonas,	177	2.3%	40.7%	59.3%
Jacobson,	71	—	46.4%	53.6%

The surprising variation in the reported results calls for some explanation, but any explanation, even that given by Halsted, fails to satisfy us entirely regarding the discrepancies in the figures. We read certain statements of the writers, however, statements which deserve notice; most of the debaters protest at once that it is impossible to trace the results of general hospital operations, because many of the hospital patients are lost to sight and can never be followed. In spite of such assumed impossibility, however, both Halsted and Greenough do give general hospital results, worked out with the greatest care, and deserving the highest praise. Halsted's cases, if one may judge from his own writing, include all of his private cancer patients

[1] Dr. R. B. Greenough, of Boston, by invitation, took the place of Dr. J. C. Warren in the discussion. At Dr. Warren's suggestion, Dr. Greenough, with two associates, — Dr. C. C. Simmons and Dr. J. D. Barney, — had worked up and reported the "results" of the Massachusetts General Hospital for the past ten years. In the discussion and in this writing Dr. Greenough's name is taken to stand for the work of that institution.

also; while Greenough's cases are general hospital patients only, — the patients of a great number of surgeons operating by diverse methods and through thirteen years, so that, as the author states, his figures do not by any means represent the best private work of any one of these surgeons, but gives us a basis upon which we may estimate the *average* of hospital surgery in the community. Although neither Halsted nor Greenough makes the following statement, it is a fact familiar to all hospital operators, that the class of patients presenting themselves at a public clinic show a far more serious average condition of advanced cancer than do an equal number of any one surgeon's private patients. This fact may explain the high end-mortality reported from the hospital clinic, but does not explain the wide variation of figures reported by the other surgeons from their private clinics. The figures of Dennis should be quite separately considered, because Dennis deals with fifty cases, which had passed the three-year limit. He traces their subsequent careers and shows for our satisfaction that of those persons who survive the three-year period, the chances of recurrence of the disease are but two in ten. Two interesting questions which have been much discussed seem to have been fairly well settled in this symposium, — the true value of a three-year limit; and the proper significance of the term " recurrence." Volkman, more than twenty-five years ago, established three years as the time-limit upon which to estimate cases, but such a limit now seems meaningless. Thirty months or five years would be equally appropriate. It is fair to say that the longer the patient survives after the operation, the less prospect is there of a recurrence. Ransohoff reports an undoubted case of his own, still living and well, twenty-nine years after the operation, while numerous surgeons report cases with recurrence eight, nine, ten, eleven, fifteen, seventeen, nineteen and twenty-one years after the first discovery of the disease and the primary operation. As for the place of late development of distant metastases (recurrence) we know them to be common within the chest, in the liver, in the vertebræ and in the long bones, as well as in the field of the original operation and in the opposite breast. A true recurrence or metastatic development of the peculiar forms of breast cancer should puzzle no expert pathologist. But physicians should remember that coincident or long delayed development of cancer in the pelvic organs, intestines, the genito-urinary apparatus, the rectum and the ends of the extremities, have no direct association with the cancer of the breast. When we see reported cases of uterine cancer following the removal of breast cancer, and *vice versa*, we should reflect that the writer records a coincidence merely. These are prefatory and explanatory remarks prompted by the interesting composite of information furnished by the papers, and we shall have to make more explanations and qualifications later; but a somewhat careful analysis of the discussion brings to the surface certain interesting factors and propositions covering the whole range of breast-cancer surgery.

Matters of pathology, of diagnosis, of metastasis, of time before recurrence and of methods of treatment bear closely on the question of eventual immunity, and with such matters it is well to concern ourselves here.

Halsted's discussion of the *pathology* of breast cancer, especially its method of dissemination, is important. He accepts the views of W. S. Handley, who published his interesting conclusions some two years ago, to the effect that metastases do not arise from particles swept along in the blood and lymph channels, but come about by a more slow and subtle method, through the actual coterminous growth of cancer cells along the finer vessels of the lymphatic plexuses. This " permeation " takes place almost as readily against the lymph stream as with it, and spreads in much the same way as would a thick injection fluid introduced by a syringe into the tissues. Cancer thus advances like an invisible annular ring, extending like a ripple in a wider and wider circle, within the circumference of which healing processes take place, so that the area of permeation at any one time is not a disk but a ring, though there may be left behind within the circumference isolated islands of the new growth, which, on careful dissection, appear as skin cancer nodules. In this way, gradually, great areas of the body's surface may be involved, including the whole head and trunk, the arms half way to the elbows and the thighs to just below the trochanters, should the patient live long enough. This gradual and wide manner of skin involvement, though occurring late in the disease, is a strong argument in support of Halsted's well-known contention that a great area of skin over the entire breast should be removed in a radical operation. Cancer is found to spread along the planes of deep fascia also; gradually advancing, following always the fascial routes, and by continuity, until it attacks distant organs and parts, — the femur, the humerus, the liver, by way of the deep fascia, the linea alba and the round ligament; the brain by the lymphatics, accompanying the middle meningeal artery, and other parts and organs in similar fashion. Such is the method of " metastasis "; but before this occurs even, the diseased tissues near their central focus assume a certain form, quite characteristic, resembling a biconvex lens in shape. " The thin circumference of the lens situated often far beyond the limits of the breast, is formed by the cancer-filled lymphatics of the fascial lymph plexus. As one approaches the centre of the lens, which corresponds to the primary growth, the adjoining layers — the subjacent muscles on the one hand, and the subcutaneous fat and skin on the other — are invaded by cancer to a gradually increasing depth."

Halsted, with many other thoughtful surgeons, admits this conception of the spread of cancer, and one sees the important bearing of this con-

ception on the subject of radical and searching operations.

The question of cancer cysts also is of grave concern to Halsted, and he dwells earnestly on the importance of making the diagnosis of malignancy in these cysts at the operation itself, if malignancy be present in cases previously assumed to be benign, as so often happens. Halsted mentions further an extremely interesting pathological condition, bearing upon Handley's teaching,— a condition of cancerous axillary glands without apparent involvement of the breast as a starting point. He refers to two such cases, in which axillary dissection had been done before the patients came to him. In both cases, some months subsequent to these operations, breast cancer frankly declared itself.

Greenough also makes certain interesting observations on the pathology of breast cancer, especially as regards the malignancy of varying types. His findings in the study of 376 cases are not novel, but his percentages are interesting, and in reading the percentages, one should remember that he deals with a great number of very advanced cases; indeed, he includes in his list a large group of hopeless cases, for which palliative operations alone were attempted — the removal of foul and sloughing masses of disease.

Medullary cancer is the most frequent form of breast cancer, unfortunately, and shows the highest percentage of fatality, both immediate and ultimate.

Scirrhus stands next with an end result nearly five points better. Adeno-carcinoma is far less malignant, while colloid cancer is the most favorable form of all.

The following table tells the story:

TABLE II (GREENOUGH).

VARIETIES OF CARCINOMA.

	Cases.	Cases surviving radical operation.	Cases free from recurrence.	Per cent.
Medullary,	136	104	19	18.2
Scirrhus,	46	43	10	23.0
Adeno-carcinoma,	24	21	10	47.6
Colloid,	4	3	2	66.0
Cancer, variety not specified,	127	107	18	16.8
No pathological report,	39	31	8	25.8

TABLE III (HALSTED).

CARCINOMA OF THE BREAST — PATHOLOGICAL VARIETIES.

	Number of cases.	Cured cases.	Per cent.
Cancer cysts,	6	2(1?)	33.3
Adeno-carcinoma,	32	24	75.0
Medullary carcinoma,	25	12	48.0
Circumscribed scirrhus,	28	13	46.4
Small infiltrating scirrhus,	80	30	35.5
Large infiltrating scirrhus,	39	8	20.5
Total,	210	89	

Greenough points out also that out of eight cases of Paget's disease but one survives, — an end-mortality of 87.5%. On the other hand, cancer developing in the lactating breast (commonly regarded as an extremely grave condition) showed an end-mortality of but 71.5% in seven cases. Cancer developing during gestation is probably more fatal than during lactation.

Halsted's remarks on glandular involvements are extremely interesting. He deals with a total number of 232 cancer cases, and of these 168 only showed any evidence of diseased glands in the axilla. That is to say, we may expect to find, in a large group of cases, the axilla involved in 72.4% only. But this must not mislead us, for in nearly a quarter of Halsted's cases, which were free from axillary involvement, metastasis occurred sooner or later; so that he is driven to remark, " We must bear in mind, however, that surely in some, and probably in many if not in most, of the axillæ recorded as negative there was disease." Regarding these glands Greenough says, " It is quite possible that in early cases, without palpable enlargement of the glands, the disease is entirely within the glands and can be readily removed; whereas, in glands which are palpably enlarged the disease has extended through the capsule and along the lymphatic trunks and become disseminated through the axillary fat to such an extent and in such minute strands that complete removal is very difficult, if not impossible of achievement." Our understanding of Handley's theory of cancer permeation makes highly probable the supposition of Greenough.

(To be continued.)

Reports of Societies.

EIGHTH ANNUAL MEETING OF THE AMERICAN THERAPEUTIC SOCIETY.

HELD AT WASHINGTON, D. C., MAY 4, 6 AND 7, 1907.

[Continued from No. 18, p. 608.]

DISCUSSION.

DR. ROBERT REYBURN, Washington, said that there is no class of patients with whom he has greater sympathy. According to his experience, physicians are peculiarly liable to contract drug habits.

DR. OLIVER T. OSBORNE, New Haven, said that the method of control was a good one and the provisions of the Maine law should be more generally known in order that interest to take similar action might be aroused in other states. Upon motion it was ordered that a copy of the law be sent to each member of the society.

DR. V. E. HENDERSON, Toronto, inquired as to the necessity of having the order of committal made before a superior justice.

DR. L. F. KEBLER, Washington, spoke of the advertised " cures " for drug habits and the method of treating patients by correspondence. Prescriptions sent through the mails are not exempt under the law. He inquired as to the number of *habitués* in the United States. He understood that there was about 1 in every 125 persons.

DR. F. E. STEWART, East Orange, told of preparations which were advertised and sold with the deliberate intention of setting up the opium habit.

DR. GERRISH, in closing, said that a Superior Justice was named probably to give dignity to the committal proceedings. He believed that any judge of a court of record could do the work. A valid criticism of the law was that those who were specified to examine the

patients prior to their release, by reason of their residence, had to take long and expensive journeys. This could be obviated by designating local county officers to do the work. He did not know the number of *habitués* in this country. Over 50% of the victims he had treated were physicians. He described the events leading up to the passage of the Maine law.

THE VALUE OF PHYSICAL TRAINING IN THE TREATMENT OF NEUROTIC PATIENTS.

Dr. B. E. McKenzie, Toronto: The first step is to make a positive diagnosis to determine whether organic disease is present. In the management of the neurotic there must be no vacillation on the part of the physician. He must separate his patient from all harmful surroundings and subject her to a kindly but firm discipline. She must be turned from introspection and egotism and taught to be cheerful, self-reliant, active and altruistic. The ordinary "rest cure" falls short in that it is merely negative. For discipline, encouragement and development, physical training in the gymnasium and on the playground is a most effective agency. It requires the assistance of a thoroughly trained and tactful director. Many excellent results are reported.

Dr. Oliver T. Osborne, New Haven, said that he had visited the institution under Dr. McKenzie's charge and heartily commended his work and methods. Neurotics form a difficult class of patients, but much can be accomplished by persistent systematic effort. He commended the gymnastic training advocated by the essayist. Suggestion, also, should not be overlooked.

PRINCIPLES UNDERLYING THE TREATMENT OF TUBERCULOSIS.

Dr. Francis M. Pottenger, Los Angeles: Dr. Pottenger classifies the measures employed in combating tuberculosis under six heads: 1. Those which aid in bringing about immunity by endeavoring to restore as far as possible the normal resisting power of the patient. Fresh air, hygienic measures, proper diet, hydrotherapy, favorable climate and suitable tonics. 2. Those which aid in bringing about immunity by artificially stimulating the body cells to the production of specific protective substances: vaccination or treatment with such products as tuberculin. 3. Those which aid in establishing immunity by supplying specific protective substances which were produced by vaccinating some animal such as the horse or cow: antitoxic sera. 4. Those measures which cause an increased flow of blood or lymph to the seat of infection: Bier's hyperemia, Finsen light, poulticing, local congestive action of tuberculin. 5. Remedies and measures which relieve symptoms. 6. Measures which relieve secondary infection.

DISCUSSION.

Dr. B. E. McKenzie, Toronto, emphasized the value of fresh air and sunlight in the treatment. He commended the paper as being thoroughly scientific.

Dr. V. E. Henderson, Toronto, spoke of the open-air treatment. We should also make use of other rational methods which promise benefit to the patient. Wright has shown us how we can do this and also in some degree measure the patient's improvement.

Dr. H. Van Rensselaer, Albany, spoke of the opsonic index as a guide for fixing the dose of tuberculin. He asked Dr. Pottenger to describe the technic used in obtaining the index. If it were not correctly determined, harm might be done by the administration of an improper dose of the remedy.

Dr. Pottenger described the technic. Much difficulty has been encountered with the method here, largely because of the poor literature on this side and inadequate preparation on the part of those who try to do the work. The discovery is one of the greatest in modern medicine. Dr. Henderson had struck the keynote. Harm is done by relying solely on fresh air and sunlight. He had for years believed that much more can be done. There are no more specifics than in any other chronic disease.

ON PYROLIGNEOUS ACID AND ITS INTERNAL USE IN ARTHRITIS DEFORMANS.

Dr. Louis Kolipinski, Washington: Dr. Kolipinski characterizes pyroligneous acid as a forgotten drug, which, however, well deserves recognition as a therapeutic agent. He describes it and explains its chemical composition. It is a dark red liquid, turning black on exposure. It has been called "liquid smoke." After discussing its physiological action, toxicology and its uses in the earlier days, he cites cases in which it has proved efficacious in his hands in the treatment of arthritis deformans. The restoration of function is well shown in the use of the hand and fingers. The claw-like posture, the extended position in which the member is held, the constant watchfulness to protect it from contact are no longer seen. Flexion and extension return and the hand resumes its duties. The patient ceases to complain unless this continues from habit.

DISCUSSION.

Dr. Arthur H. Hall, Washington, related a case of joint disease in which he had used pyroligneous acid with marked success after the usual methods had failed. The joints affected were those of the jaw and right shoulder. Two drams of the acid in water were given every three hours. Before 8 oz. had been taken the patient demonstrated that pain had disappeared, and after a time motion in the affected joints was satisfactorily restored.

Dr. H. C. Wood, Philadelphia, said that the use of undeservedly disused medicines should be revived, and he who revives them deserves credit. Unfortunately, however, in this case, from a pharmacological standpoint, the recommendation is a step backward, inasmuch as pyroligneous acid is a complex substance containing components, some good, some indifferent and some harmful. The tendency of to-day is toward the use of simple drugs. He who orders such complex substances practices polypharmacy. Pyroligneous acid depends mainly for its activity upon phenol and cresol. It is true that they have proved useful in certain cases of joint disease.

Dr. A. D. Blackader, Montreal, expressed doubt whether valid conclusions as to the value of the agent in such a resistant affection as arthritis deformans could be drawn from a few isolated cases. Sometimes the disease gets well spontaneously, and at others it becomes quiescent and later breaks out again. He agreed with Dr. Wood as to the inadvisability of using so complex a substance. Undoubtedly, this class of drugs is useful in a few cases of chronic joint disease.

Dr. Oliver T. Osborne, New Haven, suggested that some of the good may have been due to disinfection of the bowel, as in the case of epilepsy mentioned. He discussed the subject of bowel disinfection. He believed that something can be done in this line, and the beneficial action of such remedies as pyroligneous acid in joint pain may in some degree be due to this effect. He did not see how it can do any good in arthritis deformans after bone has been deposited. Some of these cases get well and no one can tell why or how.

DR. KOLIPINSKI, in closing, said that in the light of his experience he could not do otherwise than believe in the efficacy of the remedy. He appreciated the force of Dr. Wood's criticism, however, and intended to make the individual components of the acid a subject of further study.

THE VALUE OF CHEMICAL SUBSTANCES USED HYPODERMATICALLY TO ANTAGONIZE MORBIFIC PROCESSES.

DR. JOHN BLAKE WHITE, New York: Hypodermic medication was introduced by Wood, of Edinburgh, as a strictly local measure. Hunter, of London, first recognized that it can be used for systemic effect, and now it is universally believed that localization of the injection is not necessary. There is little certainty about the dose by stomach. Quinine has been given hypodermatically in malarial fever in one fifth of the dose given *per orem* with much better effect. It is possible that some morbific processes are combated by antitoxins produced by substances injected hypodermatically. The results achieved by him in fifteen years have convinced him of the superiority of the hypodermic method. Remedies given thus are not changed by the gastro-intestinal juices; they can be given to those unable to swallow, and where irritability of the stomach exists. The remedies selected should be soluble and unirritating. One should be prepared for idiosyncrasy. Dr. White exhibited a syringe which could be kept aseptic more easily than those in general use.

DISCUSSION.

DR. S. L. DAWES, Albany, said that quicker and more satisfactory results can be obtained if the solution is injected at the temperature of the body. Also, the drug used should be in perfect solution. These points are often overlooked. He asked Dr. White whether he could get as good results from the injection of chemical substances in diphtheria as we can get from the use of antitoxin.

DR. OLIVER T. OSBORNE, New Haven, inquired as to the composition of the solution injected by Dr. White in cases of sepsis.

DR. WHITE described the solution, and answered the question of Dr. Dawes.

THE IMPORTANCE OF A KNOWLEDGE OF THE NATURAL COURSE OF DISEASE IN ESTIMATING THE EFFECT OF THERAPEUTIC MEASURES.

DR. ALEXANDER MCPHEDRAN, Toronto: The universal tendency is to regard the phenomena following a cause as resulting from that cause. To nothing does this apply more fully than to therapeutics. The wish is too often father to the thought. The masses are still imbued with the ancient belief in the mythical power of drugs, and relatively the profession often shows quite as blind a faith. Dr. McPhedran urges that in estimating the effect of our therapeutic measures we should more carefully consider the natural or uninfluenced course of disease. He calls attention to the many variations which may occur in the natural course of all diseases, and how readily they can be erroneously ascribed to the administration of drugs. He emphasizes this by reference to pernicious anemia and its treatment by arsenious acid to typhoid fever, diseases of the heart, neuropathic affections, and tuberculosis. It is essential that a careful record of the patient's condition be made, with variations in the course of the illness, in order to enable us to direct intelligently the treatment and accurately estimate its effect. With the advent of the laboratory the tendency has been to rely upon it to the neglect of the proper study of the patient himself. The paper closes with a plea for the more careful keeping of hospital records.

DISCUSSION.

DR. B. E. MCKENZIE, Toronto, emphasized the importance of accurate observation of the patient in order that the physician may know the causes which produce definite results. Too often the results are *post hoc* rather than *propter hoc*, and a careful study of the patient would have shown that the changes ascribed to drugs were but natural variations in the course of the disease. He illustrated this by reference to anterior poliomyelitis.

DR. THOMAS E. SATTERTHWAITE, New York, spoke first of intestinal antisepsis. We must distinguish between drugs that kill and those that inhibit the development of bacteria in the intestine. He believed that Dr. McPhedran would agree with him that certain drugs, like the mercurials, do exert an inhibitive action, and to this extent they are intestinal antiseptics. He told a story of Alonzo Clark to illustrate how the most eminent physician can be deceived as to the outcome of heart lesions. Speaking of tuberculosis, he said that when the specific bacillus was discovered the pathologists believed that the cure of the disease was at hand. The claims made then have not been made good, and now the laity is trying to force the profession into the unnatural position of producing a cure when it cannot do so. It is true that medicine is not an exact science; neither is chemistry. He commended the suggestion as to reform in the keeping of hospital records. In a hospital with which he is connected each patient on entering is examined from head to foot, and the results are noted and handed to the superintendent without diagnosis. Then the staff meets, the reports are considered, and after discussion a general vote is taken as to the diagnosis.

DR. OLIVER T. OSBORNE, New Haven, said that the Connecticut State Hospital for the Insane has used this method for years. He believed that we can secure some degree of asepsis of the upper intestinal tract. What disease can we treat without first cleaning out the bowel to see what symptoms are left? Cleanliness is next to asepsis, but we can do more than secure mere cleanliness. He emphasized the point by reference to salol and its fate in the bowel.

DR. FRANCIS M. POTTENGER, Los Angeles: It is true that we are losing sight of the importance of accurate observation of the patient, and improved laboratory methods have tended to bring about this result. Too often we draw our conclusions wholly from the results of examination of the blood, urine, or stomach contents. No class of patients has suffered more in this way than tubercular patients. Tuberculosis is suffering not from too much laity but from too little doctor, — not enough professional study. Ordinarily the physician does not take sufficient interest in these cases. It should be remembered that the disease is curable in its early stages.

DR. A. D. BLACKADER, Montreal, said that the early physicians were too optimistic, their followers were over-skeptical, and now we are upon the middle ground, pharmacology having taught us just what drugs can do. He only can use remedies effectively who understands their action and understands thoroughly the case before him. A stock broker had said that he felt successful if 51% of his ventures resulted favorably; and so with medicine, — we should be encouraged if we get 51% of benefit.

DR. H. C. WOOD, Philadelphia: Medicine is an art, not a science. It is an art founded on science. So is music. The composer must know something of the science of acoustics in order that he may know the art of music. So with medicine; the physician, in order to reach a point of eminence, must know the facts of science upon which his art is based. Pharmacology, for

instance, is a science, — an exact science. The successful practitioner is an artist in the highest sense.

Dr. Robert Reyburn, Washington, said that the young physicians of to-day are not so well able to care for their patients as the older practitioners. They have a greater technical knowledge, but lack the ability to look after their patient's welfare. He was in favor of the old-time preceptor; thus students were enabled to see as well as to hear. Increase the sphere of clinical observation; study the patient rather than his disease.

Dr. Louis Kolipinski, Washington, said that the conception that medicine is a science probably originated with some one outside of the profession. Whether it is or is not does not help our patients. He agreed with all that had been said as to the importance of closer clinical observation.

Dr. McPhedran, in closing, further emphasized the necessity for closer observation and better records. Science is knowledge; we know certain facts relating to medicine and so are scientists; in this sense medicine is a science. He was not convinced as to the value of intestinal antisepsis and had no faith in salol; typhoid is a constitutional disease, not a local bowel trouble. He knew no cure for it.

THE TREATMENT OF POST-PARTUM PUERPERAL ECLAMPSIA.

Dr. D. Olin Leech, Washington: Post-partum eclampsia differs from the ante-partum form. The mortality in the former is less. Treatment consists in the arrest of convulsions and elimination of the poison. Morphine in ½ gr. doses is the best remedy to stop the convulsions. Chloroform may be administered, and chloral per rectum is helpful. He highly commends tincture of veratrum viride in 10 to 20 minim doses until the pulse rate falls to 60. It acts like venesection. The poison should be eliminated through the kidneys, bowels and skin. The bowels should be emptied by repeated enemata, and this followed by a pint of salt solution. Hypodermoclysis may be employed if necessary. Six ounces of milk should be given every two hours, and plenty of water. The potassium diuretics are not advisable. Activity of the skin should be promoted by the use of hot air baths, or hot packs. He has used the former to good advantage. Pilocarpine is not a safe drug to use. Magnesium sulphate or croton oil may be used as cathartics. Basham's mixture and strychnia are the best remedies in the after-treatment. Three cases of post-partum eclampsia are reported.

DISCUSSION.

Dr. H. C. Wood, Philadelphia, spoke of the physiological action of veratrum viride. Recent studies have shown that it is not a vaso-dilator, but the reduction in blood pressure is due to the slowing of the pulse rate. Jervine was formerly believed to be its dominant alkaloid, but it is now known that it plays but a subordinate part. The chief constituent, protoveratrine, is a heart stimulant. Thus veratrum viride is a stimulant rather than a sedative. If it does good in eclampsia it is by bleeding the patient into his own vessels.

Dr. W. M. Sprigg, Washington: The presence or absence of albumin in the urine is not so important a guide as the quantity of urea eliminated. In many cases of eclampsia little or no albumin is present; but deficient elimination of urea is always a danger signal. He believed that the same toxic conditions are present in eclampsia after as before delivery, and the treatment is practically the same except that in the post-partum form the uterus has gotten rid of the placenta, the source of the toxins.

Dr. Robert Reyburn, Washington, agreed with Dr. Sprigg as to the importance of urea elimination as a guide. He advocated venesection in certain cases, and cited an instance in which the removal of 16 oz. of blood from a plethoric woman was followed by almost marvelous results. The convulsions ceased immediately.

Dr. Philip King Brown, San Francisco, said that the work of Follin has shown that the urea elimination has nothing to do with eclampsia. In a recent article he shows that no matter how great the retention of urea eclampsia does not necessarily follow. Experiments on patients who have previously suffered from eclampsia point to the same conclusion. The only significance is that something else is retained if urea is. He believed that eclampsia is not due to any one cause. For one thing it is probably due to toxins from the placenta. The thyroids may also play a part.

Dr. W. A. Campbell, Colorado Springs, said that he had seen two cases of eclampsia within six months. In both cases the removal of clots from the uterus was followed by cessation of the convulsions.

(To be continued.)

Book Reviews.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University, and Tracy C. Becker, A.B., LL.B., Councillor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo, with the collaboration of 19 others. Second edition. Vol. II. Illustrated. Pp. 1008. New York: William Wood & Co. 1907.

We reviewed the first volume of the second edition of this work in our issue of April 11, 1907, and on that occasion made the statement that the book is encyclopedic in character and contains a fund of information which should be of vital interest to physicians in general, and particularly to those whose duties bring them into close relations with courts. This statement applies in equal degree to this second volume, in which the editors have the collaboration of the same writers as in the first volume. This volume contains and continues subjects relating to dead bodies or thanatology, under which is included the consideration of wounds, by gunshot and other means, death by electricity, from mechanical suffocation, from submersion, with a section on the determination of survivorship, The following section of the book concerns itself with biothanatology, or matters relating to both dead and living. Under this heading is taken up questions of abortion and infanticide, various crimes against women, and finally, railway injuries. The book in general will undoubtedly stand as an authoritative statement for many years to come on matters relating to the border line between crime and medicine.

A Text-Book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and Their Employment upon a Rational Basis. By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Twelfth edition, enlarged, thoroughly revised and largely rewritten. Illustrated. Pp. 939. Philadelphia and New York: Lea Brothers & Co. 1907.

The twelfth edition of a book requires no special comment beyond a statement of changes. As a matter of fact, inasmuch as this edition has appeared only eighteen months after its predecessor, comparatively few fundamental changes in treatment have taken place worthy of recording. Among these is the value of citrate of sodium, the treatment of syphilis by hypodermic injection, certain matters relating to saline solutions, citric acid for thrombosis in typhoid fever, and the danger of toxemia after the use of chloroform and ether. Revision has been made of the articles relating to the eye by Dr. G. E. de Schweinitz, and also of certain other articles. Since the eleventh edition the book has been translated into the Italian and Chinese languages. Its value is not to be questioned, but its title, "Practical Therapeutics," is rapidly becoming too comprehensive for the subject matter it contains. It is practically devoted to drug treatment, which must now be regarded merely as a part of therapeutic procedure.

A Laboratory Manual of Invertebrate Zoölogy. By GILMAN A. DREW, Professor of Biology at the University of Maine. 12mo, pp. 201. Philadelphia: W. B. Saunders Co. 1907.

This little volume is of unusual excellence and is perhaps the best of its kind. It is based upon the instructions prepared by Professor Drew and others for the elementary courses given in the Marine Biological Laboratory at Woods Holl. The directions have been in practical use for several years and have been repeatedly revised, under the general supervision of Professor Drew himself, by many of the workers in the laboratory. It contains for each large group of invertebrates a table of classification, with admirable succinct definitions of the principal divisions, which are so good that they alone would suffice to make the book valuable. For each group a number of characteristic forms have been selected and concise directions drawn up for their laboratory study. These are cleverly designed so as to guide the student sufficiently and yet force him to use his own powers of observation. At the end of the book is a glossary occupying 14 pages, the definitions of which have been formulated with a skill which one wishes were more common with dictionary makers. The little volume will probably be widely used for elementary zoölogical instruction.

The Essentials of Histology. By E. A. SCHAEFER. Seventh edit on. Philadelphia: Lea Bros. & Co. 1907.

The mere fact of the appearance of the seventh edition of this text-book is evidence of the great and steady favor with which it has been received. It is, indeed, a most excellent work, and the improvements which have been made for the present edition are numerous and important. We find many of the most recent investigations adequately heeded, so that information is here presented not yet in other text-books, being elsewhere recorded only in original memoirs. We find this to be the case with spermatogenesis, sinusoids, and especially with regard to the nervous system, of which the investigations of Golgi, Cajal, Apathy and many others have greatly widened our information. Although the book has grown greatly in size, it is still a slim volume, owing to the use of an excellent thin paper on which the illustrations are very successfully printed. Many of them have been improved by the use of colored inks, imparting a much greater resemblance to the actual preparations.

The author's presentation of the subject is clear and felicitous, the more important facts being emphasized, and padding with unimportant details being conscientiously avoided throughout. As a compact book of reference and as a first-class medical text-book this publication may be cordially recommended.

Modern Surgery, General and Operative. By JOHN CHALMERS DA COSTA, M.D., Professor of the Principles of Surgery and of Clincal Surgery, Jefferson Medical College; Surgeon to the Philadelphia Hospital, and Consulting Surgeon to St. Joseph's Hospital, Philadelphia. Fifth edition, thoroughly revised and enlarged, with 872 illustrations, some of them in colors. Philadelphia and London: W. B. Saunders Co. 1907.

Professor Da Costa's fifth edition has been a great solace to this reviewer. It is the work of a trained teacher whose productions become more popular with time. Fifteen years have passed since Da Costa published the first modest edition of his Manual, as he then called the book, a piece of writing which forms the foundation merely of the present work. The author aims to keep his readers abreast of the times, and has incorporated in every succeeding edition the latest surgical knowledge. For instance, in the fifth edition, which covers 1,283 pages of close printing, there are additional essays on bone lesions, on infections, on Harvey Cushing's most recent work on the head, on Ransohoff's operation for empyema, and on Brophy's for cleft palate; on the opsonins, on new methods of anesthesia, on advanced operations for breast cancer, on Hugh Young's prostatectomy, on Moynihan's and the Mayos' contributions to gastro-intestinal surgery, on Matas's operation for aneurism, and on dozens of other new and interesting topics.

We commend the book, as we have previously commended it, to surgeons and to students as the most satisfactory one-volume contemporaneous treatise on surgery, published in this country.

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MEDICAL BOOKS AND BOOK REVIEWS.

It is commonly said, and often rather thoughtlessly, that too many medical books are written and that in many departments of medicine there is no present need of further additions. It should be remembered by such critics that many books must always be written before one of marked superiority emerges to be generally accepted as authoritative. It is true of medical books as of other departments of human endeavor that there is room at the top and comparatively little anywhere below. The natural result is that many medical men endowed with a legitimate amount of self-confidence believe that they are capable of presenting a subject in a more attractive or a more conclusive form than has hitherto been the case. This attitude of mind is certainly salutary, and, in fact, indispensable to progress. If prospective writers of medical books were to abstain from the effort to put their ideas into words for the benefit of others, through modesty or the recognition that other books had been written on the same subject, it is not likely that the need, which now and always has existed, of excellent text-books would be met. A far safer course of action is to encourage by all legitimate means the writing of books in the hope that from the mass of possible mediocrity an occasional work of real significance, either from the didactic or the research point of view, will emerge. The competition among books is just as healthy a tendency as that in the industries in general. It would be altogether unfortunate if certain men or groups of men wrote all the books and were regarded as having a right to dictate to the rest of the medical profession in this regard. With the general and widespread competition which now exists, it is perfectly evident that the good books and those which are useful, whether to students or to men already in practice, will survive, whereas the others will sink into oblivion, which many of them very possibly deserve. The process at least is a natural one, and one which certainly should not be discouraged by the continued assertion that we have too many books and that the same ground is covered again and again.

An analysis of the reviews of medical books, appearing in medical journals, is also of interest. It is to be remembered that under the influence of modern specialization books in any one department of medicine are ordinarily reviewed by experts in those departments, men for whom the book under consideration may present nothing new, and to whom it very naturally appears commonplace and unnecessary. The object of the ordinary text-book, however, is not to appeal to specialists, but rather to present special subjects in a form accessible to and readable by practitioners in other departments of medicine. It is, therefore, absurd for a reviewer of a book, for example, on the eye, or the ear, or internal medicine, to assert that the volume is unnecessary and not needed simply because it reiterates what he already knows and what, in fact, may be common knowledge of those versed in that particular branch of medicine. Such criticism is both superficial and meaningless. What the critic of such a book should determine is whether it presents knowledge in a systematic fashion, with accuracy, and in a manner to appeal to the ordinary reader. These are the qualities which justify the production of new books, however much the subjects may have been traversed before and however elementary they appear. As medicine develops and subdivides, there is evidently increasing need for simple and succinct statements of well recognized facts. It is proverbial and certainly true that to write a concise book on any subject is a far more difficult task than to elaborate a monograph. Selection is a peculiarly difficult task, and one which should always be commended, if well done.

These points book reviewers in general frequently overlook. We have sometimes thought that it might be well if three quarters of the medical books were sent for review to those who in the future are going to use them. There is no question that the estimate of a book at the hands of an expert in the subject under consideration would be far different from that of a practitioner who in the endless details of his practice is eager

for a clear and even commonplace presentation of the subject. Much illiberality in the reviewing of books is apparent. They are dismissed often with a few words and with insistence on the fact that they are superfluous. It would be well to recognize the palpable fact that what is superfluous for one man is a necessity for another, and that many text-books are good just in proportion to the number of physicians they benefit. For our part we welcome new books, recognizing that some of them are excellent and most of them useful. We are strongly disinclined to condemn a book simply because it is a repetition of what has already been said. On the contrary, every encouragement should be offered to writers of books in the hope that ultimately results will appear which could be obtained by no means requiring less active competition.

PROFESSOR JOSEPH LEIDY.

A STATUE of Prof. Joseph Leidy was unveiled Wednesday, Oct. 30, 1907, at the City Hall Plaza, Philadelphia. This occasion, commemorating as it did the services of one of the greatest scientists which this country has produced, should not be allowed to pass unnoticed. At a time when the people of the country were mainly employed in other occupations than the development of science, Leidy rapidly rose into prominence and became widely known in these fields outside of his native city.

Born in Philadelphia, Sept. 29, 1823, Leidy was graduated from the University of Pennsylvania with the degree of doctor of medicine in 1844. In 1845 he became prosector to the chair of anatomy in the University of Pennsylvania, occupied at that time by Dr. Horner. The following year he was demonstrator of anatomy at the Franklin Medical College. In 1852 he took Dr. Horner's place as professor of anatomy in the University of Pennsylvania, and a year later, on the death of Dr. Horner, was made full professor of anatomy at that institution. He was then thirty years of age. In 1871 his interests were extended by the appointment to the professorship of natural history in Swarthmore College. In 1884 he became director of the Department of Biology at the University of Pennsylvania. Among the many honors which were conferred upon him, both here and abroad, were the Walker Prize from the Boston Society of Natural History, and the Lyell Medal from the London Geological Society in recognition of valuable contributions to paleontology. He was a member of the Royal Microscopical and Geological Society of London, of the Paris Academy of Science and of an immense number of other similar bodies. In 1886 he received the degree of doctor of laws from Harvard University. He died in 1891.

Leidy was, perhaps, better known as a naturalist than as an anatomist, or at least as a human anatomist. His contributions to comparative anatomy, botany, mineralogy, geology, microscopic zoölogy, helminthology, and especially to paleontology, were numerous and of great value. One of his notable discoveries of a highly practical sort was that the hog is the host from which the trichina is introduced into the human system. Leidy occupied in Philadelphia somewhat the same position that Dr. Jeffries Wyman held in Boston.

A statue to Leidy, such as now graces one of Philadelphia's public places, is a just mark of the appreciation in which he is held by his native city as well as by the world at large. The statue stands on a pedestal of granite some eight feet in height and is of bronze. The figure is standing and in an attitude of explanation. A feature which will strike the casual observer is the fact that he is represented in a sack coat instead of a more conventional garment out of deference, it is said, to his custom of never wearing any other sort of coat.

The statue was presented to the city by Mr. Talcott Williams, representing Mr. Joseph Wharton, chairman of the Memorial Committee; in his remarks he compared the attainments of Leidy to those of Stephen Girard and Benjamin Franklin. Mr. Wharton, arriving later, spoke further of Leidy's extraordinary achievements and of his lovable character. The main address was made by Dr. Henry C. Chapman, representing the Academy of Natural Sciences. Dr. Chapman characterized Leidy as "the greatest naturalist this and possibly any other country ever produced," and gave a sympathetic and appreciative estimate of his service to anatomy and to the sciences in general. The vice-provost of the University of Pennsylvania, Prof. Edgar F. Smith, president of the American Philosophical Society, supplemented Dr. Chapman's remarks. Representatives of many institutions of learning were present as well as a large number of invited guests. Among these was Professor Leidy's widow. The country at large should share with Philadelphia the satisfaction it must feel in having publicly recognized the services of this pioneer in the natural sciences.

MEDICAL NOTES.

Mr. Horace Fletcher on Muscular Efficiency after Fifty without Exercise. — A public lecture is announced at the New York Academy of Medicine for Thursday, Nov. 14, by Mr. Horace Fletcher, on the subject, "Possible Progressive Growth in Muscular Efficiency after Fifty Years of Life without Systematic Physical Exercise."

A New College of Medicine. — It is announced that the University of Wisconsin has organized a college of medicine at which, for the present, the first two years only of the medical course will be given. Requirements for entrance are at least two years of college work, with specific requirements in Latin, French, Germany, physics, chemistry and biology. The dean is Dr. C. R. Bardeen.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 6, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 55, scarlatina 46, typhoid fever 8, measles 14, tuberculosis 47, smallpox 0.

The death-rate of the reported deaths for the week ending Nov. 6, 1907, was 19.42.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 2, 1907, was 244, against 210 the corresponding week of last year, showing an increase of 34 deaths and making the death-rate for the week 20.88. Of this number 130 were males and 114 were females; 240 were white and 4 colored; 134 were born in the United States, 100 in foreign countries and 10 unknown; 47 were of American parentage, 166 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 56 cases and 4 deaths; scarlatina, 41 cases and 0 deaths; typhoid fever, 10 cases and 2 deaths; measles, 12 cases and 0 deaths; tuberculosis, 47 cases and 28 deaths; smallpox, 0 case and 0 deaths. The deaths from pneumonia were 26, whooping cough 0, heart disease 24, bronchitis 5 and marasmus 6. There were 26 deaths from violent causes. The number of children who died under one year was 47; the number under five years, 59. The number of persons who died over sixty years of age was 59. The deaths in public institutions were 82.

There were 1 case and 2 deaths reported from cerebrospinal meningitis during the week.

Meeting of Health Boards. — At a recent meeting of the Massachusetts associations of Boards of Health, at which Dr. Henry P. Walcott, chairman of the State Board of Health, presided, papers were read by Prof. James O. Jordan, milk inspector in the Boston Health Department, and by Dr. E. Channing Stowell, on the Possibilities of a Clinical Laboratory in Country Towns in Relation to Public Health Work.

NEW YORK.

Budget for Department of Health. — The city budget for 1908 was finally determined upon by the Board of Estimate and Apportionment on Oct. 30. The amount allotted to the Department of Health is $2,279,499, an increase of $432,029 over its appropriation for the present year. Of this increase, it is stated by the municipal authorities that $375,000 is mandatory, being required to maintain the existing plant at its present level of efficiency, and to provide for the completion and equipment of the city tuberculosis sanitarium at Otisville, Orange County. The only item in the increased appropriation which may be considered as optional and not absolutely required, either by law or to prevent deterioration in departmental work, is $35,000 for milk extension and an increased force for the department.

Obituary.

RESOLUTIONS ON THE DEATH OF RICHARD HENRY DERBY, M.D.

The Board of Directors and the Board of Surgeons of the New York Eye and Ear Infirmary record with profound regret the death of their late associate and colleague, Dr. Richard Henry Derby.

Dr. Derby was born in Boston in 1844; was graduated from Harvard in 1864, and from the Harvard Medical School three years later. He served as house surgeon in the Massachusetts General Hospital and subsequently went to Germany to further his studies. He was a pupil of the distinguished German ophthalmologist, Professor Von Graefe, and acted as his assistant during his stay abroad. In 1870 he returned to America and settled in New York.

Dr. Derby was appointed clinical assistant in the New York Eye and Ear Infirmary in 1871, assistant surgeon in 1873 and surgeon in 1874, and up to the time of his death was a member of our staff.

In 1886 he was elected a regular member of the Board of Directors, although he had been a member, *ex-officio*, since 1876, as well as a secretary of the Board for three years. Upon the resig-

nation of Dr. Noyes as executive surgeon, Dr. Derby was appointed as his successor, which position he held until the time of his decease, which occurred July 4, 1907. He was always deeply interested in the affairs of the institution, and for many years was a member of the executive committee.

At the time of his death Dr. Derby was a member of the New York Academy of Medicine and the American Ophthalmological Society; was a trustee of the New York Institution for the Blind, and was connected with the New York Orthopedic Dispensary and Hospital and Trinity Hospital as consulting ophthalmologist.

He was a man of great public spirit and prominent in many of the civic movements of his times; was a member of the council of the Charity Organization Society and the State Charities Aid Association; was one of Commissioner Waring's aids; an unpaid health inspector in the service of the Health Department and a member of the Committee of Seventy in 1894 and the Committee of Twenty-one in 1881 which met to reform the street cleaning system. He was also a vestryman in Trinity Church.

Dr. Derby's wide experience as ophthalmologist, his genial manner, as well as his staunch integrity, gained for him the respect and esteem of all with whom he came into contact whether professionally or socially, and his loss will continue to be deeply felt.

Resolved, That these resolutions be spread upon the minutes and that a copy be sent to the family of the deceased.

JAMES J. HIGGINSON, *Chairman*,
NEWBOLD MORRIS,
CHARLES STEDMAN BULL,
GORHAM BACON,
WALTER EYRE LAMBERT,
Joint Committee.

Current Literature.

MEDICAL RECORD.
OCT. 12, 1907.

1. *ABBE, R. *The Specific Action of Radium as a Unique Force in Therapeutics.*
2. TAYLOR, R. W. *Syphilis and Massage.*
3. WILLSON, R. N. *The Presence in Vaccine Virus of Bacilli and Spores Resembling Those of Tetanus.*
4. WINSTON, J. W. *Management of the Third Stage of Labor.*
5. JACKSON, C. *Septal Perforations: Their Closure by Plastic Operations.*
6. LEWIS, D. *Practical Venereal Prophylaxis.*

1. Abbe has made use of radium emanations in numerous cases, and has found it of great value and its action entirely different from that of the x-rays, or electricity. The author believes that radium ranks with the specifics. It is a specific for erratic cell growth. Details of its use are not yet fully worked out, and the dosage is still empirical. Some apparent cures of epitheliomata and sarcomata have endured for three years already. The force exerted by radium is in part an electric discharge, essentially of negative elements. Possibly it may supply an electric force vital to normal and orderly growth, the loss of which causes the formation of tumors. It is supplementary to x-rays and does good where they fail. The overaction of strong radium is injurious. The best results have followed one hour's exhibition of 10 mgr. R. B. on small growths, and four hours on larger ones. Ischemia of the parts aids the effect. Pigmented moles, melanotic growths and giant-celled sarcoma are particularly benefited by it. Its value in nevi and angiomata is due to its irritant action producing obliterative endarteritis and fibroid changes.

NEW YORK MEDICAL JOURNAL.
OCT. 12, 1907.

1. COHNHEIM, P. *The Different Forms of Hyperchlorhydria.*
2. NOBLE, C. P. *The Mosetig Batiste.*
3. *HUTCHINSON, W. *Varieties of Tuberculosis According to Race and Social Condition.* (Concluded.)
4. JACOBS, C. C. *Malarial Fevers of Cuba.*
5. DENCH, E. B. *The Indications for the Mastoid Operation.*
6. KROTOSZYNER, M. *Observations upon Nephrolithiasis with Vague Symptoms.*
7. THOMAS, B. A. *Surgical Complications and Sequelæ of Typhoid Fever Involving the Gall Bladder and Liver.*
8. WITHERBEE, W. D. *The "Open Method" Treatment of Cancer.*

3. In the second part of his article the writer discusses the mortality from tuberculosis among the Jews, Irish and negroes, and the relative mortality of city and country dwellers. His conclusions are: (1) races during the process of citification acquire an appreciable degree of immunity to, or increased resistance against, tuberculosis; (2) different classes of the same race appear to acquire varying degrees of a similar immunity; (3) estimation of these facts may help prognosis; (4) in the fight against tuberculosis one at least of the great forces of nature is helping, as seen in the remarkable increase of resisting power represented in the contrast in the mortality from tuberculosis of 2,488 per 100,000 in the Sioux Indians and of 71 per 100,000 in the Polish Jews. [R. I. L.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
OCT. 12, 1907.

1. *BARKER, L. F. *The Diagnosis of Exophthalmic Goiter.*
2. *PREBLE, R. B. *Medical Treatment of Exophthalmic Goiter.*
3. *KOCHER, A. *The Surgical Treatment of Exophthalmic Goiter.*
4. ROSS, G. W. *Opsonins and the Practical Results of Therapeutic Inoculations with Bacterial Vaccines.*
5. THOMAS, B. A. *Variability and Unreliability in the Determination of the Opsonic Index.*
6. CUSHNY, A. R. *The Venous Pulse.*
7. FREDERICK, C. C. *Early Post-operative Intestinal Obstruction.*
8. *CRAIG, D. H. *The Prevention and Treatment of Post-operative Intestinal Obstruction.*
9. DONOGUHE, F. D. *Successful Treatment of Acute Post-operative Ileus by Incision and Drainage of the Intestine, with Report of Four Cases.*
10. SHAW, H. L. K. *The Present Status of the Transmissibility of Bovine Tuberculosis as Illustrated by Infants and Young Children.*
11. RICKETTS, H. T. *Further Experiments with the Wood-tick in Relation to Rocky Mountain Spotted Fever.*

1. Barker reviews the various symptoms of exophthalmic goiter. Pycnocardia, as he prefers to call tachycardia, is the most constant and most important sign. In doubtful cases it may be brought out by a few doses of thyroid tablets. Enlargement of the thyroid gland is present in most cases when carefully looked for. It is as a rule slight and of vascular character. Exophthalmos is entirely absent in one third of the cases and is usually late. The various other eye signs may be of value in early cases, when perhaps only tachycardia is present. Tremor and the other thyreotoxic, neuropathic and psychopathic phenomena indicate a well developed disease. Barker, an internist, thinks it the duty and privilege of the physician to recommend early operation in this disease.

2. Preble divides the medical treatment of exophthalmic

goiter into two categories: (1) correction of the neurosis and (2) counteraction of the perversion of thyroid secretion. Rest and general hygienic and dietetic measures are apparently of some use in certain cases. Drugs, as iron, bromides, bromide of quinine, iodides, etc., seem to have no direct effect. The various organic preparations are useless with the exception of that from the thyroid itself, which is positively harmful. The various antitoxic and cytotoxic preparations, manufactured to combat the thyroid secretion, seem of very little value. Yet in spite of this discouraging review of medical treatment, the writer is inclined to advise general medical treatment, largely rest and hygiene, but only as long as the patient does not get worse.

3. Kocher urges great conservatism in the operative treatment of exophthalmic goiter. Operation is contraindicated in the time of severe intoxication. This is determined by the intensity of the various symptoms and the blood examination. It has been found that the lymphocytes increase with the progress of the disease. At the time of severe intoxication he advises medical treatment, rest and cytotoxic serum. The experience of the writer and his father has taught them to prefer several operations rather than a single extensive one. More than two arteries are never ligated at a sitting. Removal of more than one lobe of the gland at a time is dangerous. Bleeding and injury to the portion of the gland left are carefully avoided. The object of these operations is to reduce the diseased tissue or its increased vascularization and thereby reduce the absorption of thyroid secretion. In 315 operations on 254 patients with exophthalmic goiter the writer reports a cure in 83%, with a total mortality of 3.5%.

8. Craig uses eserin salicylate in1-40 gr. doses subcutaneously at the time of operation as a prophylaxis against post-operative intestinal paresis. He reports three cases of its use in the cure of this condition when it had not been used in the prophylactic manner. [R. I. L.]

Surgery, Gynecology and Obstetrics.

August, 1907

1. Cleveland, C. *The Prophylaxis of Venereal Disease from the Standpoint of the Gynecologist.*
2. *Newell, F. S. *Further Experiences with Scopolamine-morphine Anesthesia in Obstetrics.*
3. *Fry, H. D. *Pubiotomy in America, with the Report of Two Cases.*
4. *King, A. F. A. *New Methods of Version in Transverse Presentations.*
5. Stone, I. S. *A Study of Utero-Sacral Ligaments.*
6. *Cragin, E. B. *The Prophylactic and Curative Treatment of Ophthalmia Neonatorum. What Silver Salt Shall be Used and What Strength.*
7. Byford, H. T. *The Use of Laxatives in the After-Treatment of Laparotomy.*
8. Gordon, S. C. *Method of Closing Laparotomy Wounds.*
9. Baldy, J. M. *After-Treatment of Abdominal Section.*
10. Boldt, H. J. *How Long Must Patients Observe Absolute Rest in Bed after Abdominal Operations?*
11. Vineberg, H. N. *Eserine Salicylate as a Prophylactic against Atony of the Bowels.*
12. Smith, A. L. *After-Treatment of Abdominal Sections.*
13. Kirkley, C. A. *Method of Closing the Abdominal Incision by Suture.*
14. Robb, H. *The Comparative Advantages of Catgut and Silver Wire Sutures for closing the Fascia after Abdominal Incision.*
15. *Peterson, R. *Incision of the Anterior Uterine Wall (Anterior Colpohysterotomy) as a Treatment of Chronic Inversion of the Uterus.*
16. *Harris, P. A. *Inversion of the Vagina.*
17. Davis, E. P. *Induced Labor and Delivery by Abdominal Section.*
18. Wakefield, W. F. B. *Cystic Lymphangioma of the Gastro-Colic Omentum.*
19. Frank, J. *Opening of the Cranial Cavity for the Removal of Tumors and Evacuation of Circumscribed Infections.*

2. Newell reports marked benefit from the use of scopolamine-morphine anesthesia in obstetrics; no bad effects noted. The solution was used as follows: as soon as uterine contraction occurred, at five-minute intervals an initial dose containing 1-150 gr. scopolamine, and ¼ gr. of morphine was given hypodermically. This was repeated at intervals of one to two hours, unless patient showed marked reaction to the initial dose. In no case was the dose repeated after the cervix became two thirds dilated. The results of this treatment were that the pain of labor was markedly reduced; the recollection of pain endured was almost obliterated; labor was shortened, as well as made easier; the necessity of operative interference has been distinctly reduced; there has been no tendency to hemorrhage. It is important that the drugs be used as fresh as possible.

3. Fry has reviewed the cases of pubiotomy done in America. He concludes that it is a satisfactory operation for enlarging the pelvic girdle in moderate degrees of contraction. It is easy to perform, and can be employed in small flat pelves. The convalescence, however, is usually unsatisfactory, and the writer feels for this reason it will obtain but a limited field of usefulness as an elective operation. The indications for pubiotomy are a living child and some contra-indications to Cesarian section.

4. King describes a method of version in transverse presentations by the employment of thigh pressure of the mother upon the external surface of the abdomen, induced either by squatting or the kneeling posture. In several instances this method, correctly applied, has been successful in transforming a transverse presentation into one of the vertex.

6. In the prevention of ophthalmia neonatorum, Cragin has used the various silver preparations in varying strengths in a large series of cases. He concludes that the most efficacious salt is 20% argyrol.

15. Peterson reports the treatment of chronic inversion of the uterus. In his opinion the vaginal route and the operation of anterier colpohysterotomy (Spinelli) are much preferable to the abdominal route or other forms of operation; by this means the uterus can be replaced, and several instances of subsequent pregnancy have been observed. The article is well illustrated.

16. After complete removal of the uterus, inversion of the vagina will follow in a considerable portion of all cases, unless while removing uterus stumps, all its ligaments be securely fastened in the fundus of the vagina. Harris reports his method of so fixing the ligaments, and advocates its employment in all cases of total hysterectomy.

[W. C. Q.]

The Lancet.

Oct. 12, 1907.

1. Bennett, W. H. *Lecture on Some Aspects of Appendicitis, Especially with Reference to Cutaneous Hyperesthesia as an Aid to Diagnosis in Certain Complications.*
2. Foulerton, A. G. R. *Address on the Value of Preventive Medicine as a Factor in the Welfare of the State.*
3. Gibson, G. A., Gray, S., Meldola, R., and Kilmorey. *Abstracts of Introductory Addresses, etc., Delivered at Medical Schools.*
4. Colt, G. H. *The Gag.*
5. Lamb, G., and Hunter, W. K. *Action of Venoms of Different Species of Poisonous Snakes on the Nervous System. Venom of Enhydrina Valakadien.*
6. Sommerville, D. *Education in Hygiene for Teachers.*
7. Bruce, H. W. *Case of Vincent's Angina in which the Larynx and Trachea were Involved.*
8. *Kenwood, H. R. *"Hygiene" as a School Subject in Elementary Schools.*
9. *Watson, C. *The Influence of Diet on the Liver.*

8. Kenwood, in an article on hygiene as a school subject in elementary schools, believes that if the teaching of the simpler rules of hygiene were spread over the whole school curriculum it would make but little demand upon the time and energy of the teachers, either in acquiring the necessary knowledge or communicating it to the scholars. He believes that such a scheme should embrace the following items: (1) the importance of fresh air and how to obtain it; (2) the importance of cleanliness of person and surroundings; (3) the healthy maintenance of certain bodily functions and the formation of hygienic habits; (4) the

dangers of contamination of water, air and food, and how to guard against them in the home; (5) temperance in all things; (6) for girls, the elementary facts of the care of infants, and the selection of food and simple cooking. In other courses he believes that the subject of hygiene could be indirectly introduced by means of compositions on matters pertaining to hygiene and proper living. He believes that this subject if properly introduced will do much toward improving the physical condition of the students at the school and in their homes.

9. Watson has experimented on rats by feeding certain series meat alone and others a pure carbohydrate diet. He gives the details of his experiments, and from them deduces the one important fact that the liver is modified by diet, and in particular that a mixed diet which contains a large amount of nitrogenous food throws a greater strain on the liver than a diet given in unrestricted amount, in which the nitrogenous elements are in smaller proportion. [J. B. H.]

THE EDINBURGH MEDICAL JOURNAL

OCTOBER, 1907.

1. THOMSON, A. *Making of a Shelf below the Unduly Mobile Kidney.*
2. *MATTHEW, E., AND MILES, A. *Observations on the Blood Changes Subsequent to Excision of the Spleen for Traumatic Rupture.*
3. *STUART, W. J. *Operative Injuries of the Thoracic Duct in the Neck.*
4. BOWKER, G. E., AND LINDSAY, J. *The Skiagraphy of Rheumatoid Arthritis.*
5. PRINGLE, G. L. K. *Hydrotherapy and Electricity in the Treatment of Neurasthenia.*
6. MILES, A. *Résumé of Some Recent Papers on the Ultimate Results of Operations for Cancer of the Breast.*

2. Matthew presents his observations on the blood changes subsequent to excision of the spleen. His own case is of a laboring man of thirty-eight, who, while drinking one evening, was hit lightly in the splenic region by a friend. There were no signs until the following morning, when he began to suffer from severe pain in that region, with diarrhea, vomiting and all the signs and symptoms of an acute general peritonitis. On operation the spleen was found quite disintegrated and was removed. The blood was watched for over two years. He concludes that after the extirpation of the spleen there is (1) an enlargement of various lymphatic glands soon after the operation, but not to any great extent, nor of any great duration; (2) an absolute and relative increase in the number of lymphocytes persisting for years after the removal of the spleen; (3) a moderate eosinophilia with an increase of the blood plates for some weeks; (4) after recovery from the loss of blood, the red cells and hemoglobin show normal values; (5) after excision of the spleen individuals who recover suffer from no inconvenience; the spleen is consequently not indispensable.

3. Stuart presents a careful paper on operative injuries of the thoracic duct in the neck. He gives the details of his own case which was operated on for the recurrence of a cancer of the breast. He considers in detail the normal anatomy and the variations in anatomy of the thoracic duct, and discusses the various kinds of operative injuries. In the list of 40 cases of operative injury, which he has collected from the literature, 16 were for tuberculous glands, 20 for malignant disease. In 26 cases the injury was recognized during operation, in 13 cases it was not; 35 cases recovered, 5 died. As regards treatment, there were 15 cases in which ligature was used, 11 which were packed. He believes that ligature of the cut end of the duct is by far the best form of treatment in every case if possible. He concludes that operative injuries of this duct are probably far commoner than is generally imagined. He gives a careful summary of the 42 cases which he has been able to collect [J. B. H.]

BRITISH MEDICAL JOURNAL.

OCT. 12, 1907.

1. MCBRIDE, P. *Clinical Remarks on the Functional Element in Certain Forms of Anosmia.*
2. ROLLESTON, H. D. *Congenital Syphilitic Obstruction of the Common Bile Duct.*
3. DODDS, H. B. *A Modification of Leishman's Method of Estimating the Opsonic Index.*
4. PLOWRIGHT, C. T. M. *Malignant Disease of the Intestine Rendering an Inguinal Hernia Irreducible.*
5. JOHNSTONE, R. J. *Recurrence of Retroperitoneal Lipoma; Operation; Recovery.*
6. MURSELL, H. T. *Case of Retroperitoneal Hematocele Producing Acute Intestinal Obstruction.*
7. BOLTON, J. S. *What Can the Family Doctor Do for the Inebriate?*
8. JOHNSTON, R. M. *The Teaching and Status of Laryngology and Otology.*
9. SEMON, F., AND HORNE, W. J. *Discussion on the Differential Diagnosis of Tuberculosis, Syphilis and Malignant Disease of the Larynx.*
10. LOW, W. S. *Nasal Obstruction; Submucous Turbinectomy.*
11. FULLERTON, R. *Teratoma Arising from the Right Tonsillar Region.*
12. *YONGE, E. S. *Observations on the Determining Cause of the Formation of Nasal Polypi.*
13. JACKSON, G. *The Importance of the Nasal Accessory Sinuses in Relation to the Ears.*
14. ONODI, A. *Etiology of the Complications of Empyema of the Accessory Nasal Cavities.*
15. MILLIGAN, W. *Discussion on the Treatment of Chronic Suppuration of the Middle Ear without Resort to Radical Mastoid Operation.*
16. NOURSE, C. *Observations on Frontal Sinusitis.*
17. SYME, W. S. *Remarks on a Case of Acute Suppuration of the Middle Ear Complicated by Septic Meningitis and Brain Abscess.*
18. BRONNER, A. *A Case of Thrombosis of the Lateral Sinus and Obliteration of the Jugular Vein.*
19. MILLIGAN, W. *The Surgical Treatment of Labyrinthine Suppuration.*
20. WILLIAMS, P. W. *Surgical Anatomy of the Accessory Sinus, — Sphenoidal Sinus Disease.*
21. GUTHRIE, T. *Development of the Mastoid.*

12. Yonge gives a careful paper on the determining cause of the formation of nasal polypi. According to his observations the probable sequence of events is as follows: (1) chronic inflammation of the mucous membrane; (2) dilatation of the glands either through inflammatory closure of their orifices or hyper-filling of the glands due to over-stimulation; (3) edematous infiltration of the surrounding tissues, resulting from the passage of serum through the capillary walls, with (4) formation of folds or projections of the infiltrated mucous membrane; (5) increase of edema in certain of the folds, resulting in (6) the formation of flat edematous projections, the bases of which gradually become constricted or stretched until they form pediculated nasal polypi. He gives the pathological and clinical evidence on which this sequence of facts is based. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. NO. 34.

AUG. 22, 1907.

1. LOEFFLER, F., AND RÜSS, K. *Arsenious Acid a Specific for Experimental Nagana.*
2. DÖNITZ AND KLAPP. *Chirosoter, a Disinfectant Spray for the Hands.*
3. *HEILE. *Etiology and Treatment of Post-operative Intestinal Disturbances.*
4. *KAEHLER, M. *Operative Treatment in Three Cases of Typhoid Perforation and Peritonitis.*
5. WEBER, L. W. *Progress in Diagnosis of Nervous Affections.* (Concluded.)
6. *WEDERHAKE. *To Ensure the Removal of all Compresses after Abdominal Operations.*
7. MÜLLER, G. J. *Status of Actinotherapy.* (Concluded.)

3. Heile calls attention to the diarrheas which are occasionally encountered in the after-treatment of operations on the gastro-intestinal tract. These he maintains are due to lack of alkali. The intestinal contents as it passes from the small into the large intestine always has an alkaline reaction in man and in dogs. The amount of alkali depends on the amount ingested and the amount of intestinal juice secreted. When the intestinal acids cease to be neutralized by alkaline elements, they have an irritat-

ing effect on the mucous membrane and diarrhea results. When the alkali ingested is not sufficient to keep the balance, and the intestinal juices are lost in the diarrhea, the organism suffers from alkali poverty, and in severe cases coma may ensue and acetone appear in the urine. In cases of inanition the urine should be examined for diacetic acid and acetone, and the history studied for previous diarrhea. After operations on the digestive tract ileus may develop and the patient succumb in coma from lack of alkali. Such patients should be fed with carbohydrates, and sodium bicarbonate should be given in various ways, even by intravenous injection of a 3% to 10% solution. Heile goes on to describe some cases in which vigorous treatment with alkalies apparently saved the patient. One case, after operation for suppurative peritonitis, was already in coma from post-operative ileus followed by profuse diarrhea. Opium treatment for the diarrhea, and administration of from 12 to 15 gm. of sodium citrate daily, arrested the diarrhea and prompt recovery followed.

4. Kaehler reports three cases of operation for typhoid perforation occurring in the Strasburg surgical clinic in the last two years. Two died and one recovered. All were in young individuals and during a relapse in the affection. He emphasizes the necessity of the earliest operation if any beneficial results are to be obtained.

6. Wederhake's method for avoiding the leaving of compresses in the abdomen after operation consists of using a square yard of gauze cut nearly into quarters, a small circle in the center of the square being left untouched. By this method the four quarters are left attached to each other in the center. If desired the squares can be cut into eighths, all united in the center, and the square can be of several thicknesses of gauze. He then uses these quarters or eighths as separate compresses, and finds them as convenient as if they were separate. When ready to suture the abdomen, the entire set of compresses is lifted out together, not requiring any counting.

[L. G. M.]

Münchener Medizinische Wochenschrift. No. 35. Aug. 27, 1907.

1. Kuhn, E. *The Numerical Increase in Red and White Corpuscles of the Blood and of the Hemoglobin under the Use of the "Suction Mask."*
2. Apolant, H. *Experimental Reversion of Mouse Carcinoma to Adenoma.*
3. *Schüffner, W. *Bile Agar as a Culture Medium for Typhoid Bacilli.*
4. Segale, M. *The Internal Friction of Blood Serum in Morphinized Animals.*
5. Neuburg, C., and Reicher, K. *Lipolysis, Agglutination and Hemolysis.*
6. *Walko, K. *Gastric Disturbances in Chronic Lead Poisoning.*
7. Polano, O. *The Treatment of Dysmenorrhea.*
8. Köhler, E. *Infection of the Cells of the Turbinate Bone.*
9. Emin. *Severe Cerebral Conditions Appearing after Ligature of the Common Carotid and Internal Jugular; Recovery.*
10. Hillenberg. *The Use of Tissue Paper in the Contagious Diseases.*
11. Karehnke, M. *Communication on Thigh Dislocation.*
12. Herse, E. *The Action of the Quartz Lamp on the Deeper Tissues.*
13. Köhler, F. *Obituary on Theobald Kerner.*

3. Schüffner in making blood cultures from typhoid patients uses bile agar plates, on which the blood is poured. With this procedure he has excellent success. He finds two kinds of colonies, one the usual form of typhoid colony, small and discrete, the other much larger, and growing with great rapidity. This latter form of typhoid colony has never been observed before.

6. Walko has observed a series of chronic lead poisoning cases, 49 in all, with especial reference to the gastric condition. He finds disturbance of the gastric function, characterized by an absence or great diminution both of free HCl and gastric ferments, with a coincident lessening of motility. These disturbances are of long duration, and are usually functional, though occasionally organic changes in the gastric mucosa are met with. [R. D.]

Berliner Klinische Wochenschrift. No. 33. Aug. 19, 1907.

1. Bickel, A. *Researches on the Effect of Metals on the Gastric Mucous Membrane.*
2. *Kentzler, J. *The Rôle of HCl in Gastric Digestion.*
3. *Weil, E., and Tsuda, K. *Delaying of Phagocytosis in Test-Tube Experiments.*
4. *Martini. *Kala-Azar (Tropical Splenomegaly).*
5. Lipschitz, R. *Remarks on Facial Paralysis.*
6. Clenna, W. N. *A New Iron Preparation.*

2. Kentzler, in a series of experiments, shows that the process of preparing albumin for absorption takes place in the stomach. Further experimentation has shown that it is the hydochloric acid of the stomach, in certain definite cencentrations, which brings about this transformation. Pepsin, the author claims, has no effect on the process.

3. Weil and Tsuda have found that in the case of the bacillus of dysentery, the presence of dysentery aggressin delays phagocytosis by guinea pig's leucocytes. This is a specific reaction, for no effect was produced on the phagocytic power for hay bacilli and staphylococci. This lessening of phagocytic power does not depend on removal of the opsonins, for it appears also when bacteria already under the influence of opsonins are exposed to the action of the aggressin. Loss of phagocytic power is, therefore, an active process, by which aggressin protects the bacterium from the phagocyte.

4. The author describes the symptomatology, and characteristic blood findings of Kala-azar, as seen in South Africa and Asia. The clinical picture is characterized by chronicty, marked splenic tumor, anemia, leucopenia and edema. The portal of entrance for the parasite, whose presence is characterized by the "Leishman-Donovan bodies," is undoubtedly through the gastro-intestinal tract. The host of this parasite the authors consider to be certain kinds of fishes. [R. D.]

No. 34. Aug. 26, 1907.

1. *Hölker. *Sporadic Cases of Epidemic Cerebrospinal Meningitis, and their Diagnosis.*
2. *Benjamin, E., and Sluka, E. *A Chronic Blood Disease, Accompanied by Long Standing Icterus (Chronic Acholuric Icterus).*
3. Proskauer, F. *The Employment of Guaiacol Preparations in Anemic Conditions.*
4. Rehfisch, E. *The Point of Origin of the Ventricular Contractions.*
5. Brand, E. *The Effect of Dialysis on the Complement.*
6. *Meyer, O. B. *The Reflex of the Dorsum of the Foot.*
7. Glücksman, G. *Congestive Conditions of the Pelvic Organs in Relation to Appendicitis.*
8. Barth, E. *Functional Disorders of the Voice and Their Treatment.*
9. Laqueur, A. *New Views on Hydrotherapy.*

1. Hölker reports nine cases which clinically seemed to be sporadic cerebrospinal meningitis; in two of these the specific organism of Weichselbaum was not found until between two and five weeks after onset, though repeated attempts to obtain it were made. In six other cases, all of which closely resembled cerebrospinal meningitis, lumbar puncture or autopsy revealed other etiological factors. Two cases of purulent tuberculous meningitis were seen, in which polynuclear leucocytes predominated in the spinal fluid. The absence of lymphocytosis of the spinal fluid, therefore, does not positively exclude tuberculous meninigitis.

2. Benjamin and Sluka report the cases of a grandfather, father and child, without luetic history, who suffered from chronic icterus, the latter two from birth. All had urobilin, but no bile in the urine, with the normal amount of bile in the stools. Each one gave the same blood picture, that of a severe anemia. The father and child had marked enlargement of the spleen. The authors consider that either there was present an inherited anomaly of the hematopoetic system, or that these individuals were under the influence of some toxin, which affected the bloodmaking apparatus.

6. Mendel has shown that in certain organic nerve diseases, a tap on the dorsum of the foot produces plantar flexion of the toes, the great toe excepted, and that in

health there is a dorsal flexion. The author has tried this in 10 cases of organic nerve disease, in which no Babinski was present, and found Mendel's reaction positive in each case. [R. D.]

The Influence of Salt in the Diet on Arterial Tension. R. BAYER (*Arch. für Experimentelle Pathologie und Pharmakologie. Bd.* 57. *Hft.* 1 and 2, p. 162) reports from Krehl's clinic very interesting observations on the effect of changes in the salt content of the diet in cases of arteriosclerotic hypertension. A practically salt-free diet (about 4 gm. NaCl per diem) invariably reduced the blood pressure by considerable amounts, frequently as much as 30 mm. Hg, while the addition of 15 gm. of salt to this diet always gave a marked rise in the blood pressure, considerably above that noted on an ordinary hospital diet. All of these cases showed a well-marked salt retention, that is to say, the salt administered was only in small part excreted within twenty-four hours. It should be particularly noted that these were all cases of arteriosclerosis in which with increased tension there was no evidence of nephritis. This work is of great value, for it shows how the blood pressure may be reduced without the use of drugs, and explains the fact, already known, that a milk diet will reduce the tension, a milk diet being one containing relatively small amounts of salt. In nephritis, on the other hand, the same rules do not seem to apply. C. Loewenstein (same Journal, p. 137), working also at Krehl's clinic, was unable to obtain any constant results on blood pressure by varying the amounts of salt in the diet, contrary to the experience of several French observers. Out of 10 cases only one showed a marked increase of pressure after the administration of salt, and in one case of chronic nephritis, in which there was a very marked salt retention, the blood pressure actually decreased during the administration of large doses of salt. It is interesting to note that in two instances after large doses of salt, edema of the lungs occurred, but was relieved by the use of cardiac stimulants and venesection. The administration of large amounts of salt to nephritics is therefore no indifferent procedure, and requires careful watching of the patient. [W. T.]

Miscellany.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

PROGRESS along all lines connected with the International Congress on Tuberculosis, which is to take place in Washington from Sept. 21 to Oct. 12, 1908, was shown by the reports presented at a meeting of the Committee of Arrangements, held in New York, at the Associated Charities Building, Monday evening, Oct. 28. Dr. Lawrence F. Flick, of Philadelphia, chairman of the committee, presided, and the other members present were: Dr. Joseph Walsh, Philadelphia, secretary; Dr. John S. Fulton, Washington, secretary-general; Mr. William H. Baldwin, Washington; Dr. Hermann M. Biggs, New York; Dr. Frank Billings, Chicago; Mr. Edward T. Devine, New York; Mr. Livingston Farrand, New York; Dr. J. C. Greenway, Greenwich, Conn.; Dr. Chas. J. Hatfield, Philadelphia; Dr. Abraham Jacobi, New York; Dr. Alfred Meyer, Mrs. James E. Newcomb, New York; Gen. Geo. M. Sternberg, Washington, and Dr. Wm. H. Welch, Baltimore.

The meeting was the first held since Dr. Flick's return from abroad, and his reports of his visits to the International Conference on Tuberculosis in Vienna and to the International Congress on Hygiene and Demography, at Berlin, were interesting features of the session. More than a thousand delegates were registered at Vienna, he said, and the gathering at Berlin was quite as large. The leading men in both associations are looking forward with a great deal of enthusiasm, Dr. Flick said, to the meeting in Washington, next year, and about four hundred of the members of the foreign organizations may be expected to attend the Congress. The Conference selected this country as its place of meeting in 1908 just as the Congress did two years ago. The Conference and the Congress are two distinct organizations. The International Conference on Tuberculosis meets every year and keeps up a continuous organization with headquarters in Berlin. The International Congress on Tuberculosis meets only once in three years and does not maintain an international bureau in the intervals. Dr. Flick stated that at the International Conference, interest centered especially in the time-worn subject of the routes of invasion for the tubercle bacillus. It seems to have been demonstrated that the disease may be contracted by both the respiratory route, and the alimentary route. Though this does not make us much wiser in a practical way, still it is somewhat comforting to know that the respiratory route is less important than it was once thought to be. On the other hand, that information is compensated by the importance of the alimentary route.

In connection with his account of the progress made in the preliminary arrangements for the International Congress on Tuberculosis, Dr. John S. Fulton, the secretary-general, reported that ten distinguished foreigners have consented to participate in the series of special addresses that are to form a part of the program. The names of these eminent specialists follow: Dr. R. W. Philip, Edinburgh; Dr. C. Theodore Williams, London; Dr. Arthur Newsholme, health officer, Brighton, England; Dr. C. H. Spronck, Utrecht, Holland; Dr. Karl Turban, Davos-Platz, Switzerland; Dr. Gotthold Pannwitz, Charlottenburg; Dr. Emil von Behring, Marburg; Dr. A. Calmette, Pasteur Institute, Lisle, France; Dr. Maurice Letulle, Paris; and Dr. S. Kitasato, Tokyo, Japan.

Dr. Fulton also reported that up to the date of the meeting, the governors of twenty-three states had lent official auspices to the Congress. This not only insures official representation so far as that many states are concerned, but it insures an active organization in each of these states, that will be interested in the Congress. The states in which this action has been taken so far are: California, Utah, Montana, North Dakota, Minnesota, Wisconsin, Illinois, Iowa, Indiana, Michigan, Ohio, Kentucky, Kansas, Tennessee, South Carolina, North Carolina, Maryland, New York, Massachusetts, Vermont, Maine, West Virginia, Missouri.

Reporting on the formation of state committees, the secretary-general said that such committees had been appointed in nearly all of the states in the United States; that several have already

organized and are earnestly at work. He reported also that replies have been received from various foreign countries in reference to the appointment of committees, and the replies indicate that the countries addressed will be represented in nearly every instance by exhibits, as well as by delegates.

Correspondence.

LETTER FROM LONDON.

[From our Special Correspondent.]

THE NINTH FARADAY LECTURE. OSLER'S WORKING COLONY FOR CONSUMPTIVES. AN OPEN-AIR SCHOOL.

LONDON, Oct. 18, 1907.

Mr. Editor: I have just returned from the Royal Institution, where the ninth "Faraday lecture" has been delivered by Emil Fischer, and delivered, as was pointed out by Sir James Dewar in seconding the vote of thanks proposed by Sir Henry Roscoe, on the same spot, at the same table, in the same lecture theater amid circumstances almost precisely similar that Sir Humphry Davy exactly, a hundred years ago to the day, demonstrated to the Royal Society the elements potassium and sodium he had then isolated; the year 1807 was indeed the *annus mirabilis* of the Royal Institution, and the eve of the historic nineteenth of October was now doubly honored. It has been said that the greatest discovery Davy ever made was Faraday, and on this occasion both were commemorated.

These facts are in themselves of sufficient interest to warrant my mentioning them in my letter to you, but when I tell you that the subject of the address was the relation of synthetical chemistry to biology and its substance a record of great achievements of the highest moment to physiology, to pathology and to medicine, you will, I am sure, exonerate me for some enthusiasm.

Organic chemistry may be said to be the offspring of biology, the direct descendant of the science of medicine, and though she has developed a vigorous and entirely independent growth, she now returns to lend her most potent aid to the solution of problems we were otherwise unable to solve.

The problems of digestion have been solved to some extent, and we know something about the chemistry of the end products of metabolism, but we have always been in the dark about the changes that take place in the wonderful laboratory of the tissues.

The isolation of urea by Rouelle in 1773 and its synthesis by Wohler in 1828, forms the starting point not only of our conception of the identity of "organic" and "inorganic" chemistry, but also of the long series of syntheses of substances occurring in animal and vegetable tissues, culminating in the artificial production of polypeptides, which closely resemble peptones and proteins.

The construction of organic matter begins in the leaves of plants with the conversion of CO_2 into sugar. Fenton has converted CO_2 into formaldehyde; von Paeyer and Loew have produced from this, by heating it with lime water, a sugar-like product in which Fischer has found an acrose which can be transformed into glucose. There is at present no evidence as to the exact part taken by the optically-active constituent of the chlorophyll granules, but Siegfried has shown that the simple amino-acids are capable of combining with CO_2, and in all probability the proteins offer sufficient opportunity for its fixation. The combustion of carbohydrates in the body is brought about by means of oxidizing enzymes, but we know nothing of the composition of the enzymes because the complete isolation of an enzyme has never been accomplished.

The synthesis by Stolz of the crystalline adrenalin isolated by Takamine, indicates that it has a relatively simple structure; the same is true probably of "secretin," which has the property of liberating enzymes from the pancreas, and Fischer has demonstrated the exact dependence of enzyme action upon close similarity in stereo-configuration between the enzyme and the substance it attacks, a geometrical relationship so close that the lecturer applies the simile of lock and key for its expression.

Since the stereochemistry of the glucosides and polysaccharides is well understood, some idea of the configuration of the enzymes may be inferred, and their synthesis thus becomes not impossible within the near future.

To unravel the constitution of the proteins, hydrolysis by acids, alkalies and digestive ferments has been employed, and nineteen of the ultimate products, amino-acids, have been isolated, five of them in the twentieth century. Of these only three remain to be synthetized, and those already produced artificially have even been obtained in their optically-active form. Moreover, Professor Fischer has been able to refer the configuration of some of them to that of glucose.

Fischer and Abderhalden have prepared a peptide, l-leucyl-triglycyl-l-tyrosine which has all the properties of the albumoses, and the knowledge gained from the synthesis of this and many other peptides has opened up new ways of investigating the peptones and albumoses analytically. Chemists confidently expect to accomplish the artificial production of the nucleins, lecithin and cholesterin in the immediate future.

It is in fact due to the labors of organic chemists that we find ourselves within measurable distance of an understanding of the intimate nature of the bodily processes which it is essential we should possess for the proper appreciation of the morbid conditions that constitute disease and the means for rational therapy.

At the conclusion of the lecture Lord Rayleigh presented to Professor Fischer the Faraday medal of the Chemical Society.

Since my last letter we have had the annual meeting of the British Medical Association at Exeter, at which the privilege of listening to eloquent speeches by several physicians and surgeons from your side of the water was properly appreciated; the second International Congress of School Hygiene and the meeting of the British Association; but these are all so fully reported that you need no words from me on them.

If space permitted, I should like to tell you something of the scheme initiated at a little sanatorium down in Oxfordshire in which Osler has interested himself, for the establishment of a working colony for consumptives, where even the poorest can find opportunity to earn something by light employment as soon as they are able, and so prolong their stay away in the country under conditions as to air, food and hygienic discipline suited to the attainment of permanency in their cure, instead of returning to the unfavorable surroundings of work in the cities which so often results, if not in a fatal issue, at least in that "hope deferred" which "maketh the heart sick."

The London County Council has put into operation this year an "open-air school" on some high woodland to the southeast of London to which we have been very glad to send some of our little hospital patients, with, so far as my experience goes, the happiest results.

We could wish that the Imperial Parliament showed a tithe of the intelligent appreciation of the disinterestedness of the measures proposed by preventive medicine possessed by the London County Council.

C.

"PROSTATECTOMY IN TWO STAGES BY SPECIAL TECHNIC."

NEW YORK, Oct. 27, 1907.

Mr. Editor: In the issue of your valuable JOURNAL for Oct. 24, 1907, there is an article by me entitled "Prostatectomy in Two Stages by Special Technic."

Thinking that I should see proof of the article before it was published, I was not as careful in the construction of sentences and punctuation as I should otherwise have been. Unfortunately, owing to a change in my address, the proof did not reach me.

On page 556 of the JOURNAL, under the third division of conclusions, the sentence should read: "Its advantages are: the quick relief afforded, slight shock and absence of serious symptoms."

Very truly yours,

FOLLEN CABOT, JR., M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCT. 26, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	11	2
Chicago	—	—	Waltham	13	3
Philadelphia	—	—	Pittsfield	8	1
St. Louis	—	—	Gloucester	7	2
Baltimore	214	63	Brookline	6	2
Cleveland	—	—	North Adams	4	0
Buffalo	—	—	Chicopee	5	3
Pittsburg	—	—	Northampton	10	1
Cincinnati	—	—	Medford	6	2
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Leominster	7	3
Providence	53	12	Hyde Park	4	1
Boston	192	48	Melrose	5	2
Worcester	39	8	Newburyport	—	—
Fall River	46	21	Woburn	3	1
Cambridge	27	4	Marlboro	3	1
Lowell	38	11	Westfield	5	2
Lynn	18	7	Peabody	—	—
New Bedford	30	17	Revere	2	—
Springfield	22	2	Attleboro	—	—
Lawrence	23	5	Clinton	4	1
Somerville	27	7	Adams	10	5
Holyoke	11	4	Gardner	—	—
Brockton	12	4	Milford	5	2
Malden	11	1	Watertown	2	1
Chelsea	11	4	Plymouth	—	—
Salem	15	5	Weymouth	2	0
Newton	11	2	Framingham	4	2
Haverhill	15	2	Southbridge	—	—
Fitchburg	10	4	Wakefield	—	—
Everett	3	—	Webster	—	—
Taunton	17	6			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOVEMBER 2, 1907.

H. A. MAY, passed assistant surgeon. Commissioned passed assistant surgeon from April 22, 1907.

R. E. LEDBETTER, passed assistant surgeon. Ordered to the Navy Yard, Norfolk, Va., Nov. 14.

A. STUART, passed assistant surgeon. Ordered to the "Yankton" Nov. 5.

M. BOLAND, assistant surgeon. Detached from duty at the Naval Hospital, Norfolk, Va., and ordered to course of instruction at the Naval Medical School, Washington, D. C.

W. N. MCDONOLL, assistant surgeon. Detached from the "Yankton" Nov. 5, and ordered to the Naval Hospital, New York, N. Y.

G. T. GRAYSON, passed assistant surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the Naval Dispensary, Washington, D. C.

F. E. PORTER, assistant surgeon. Detached from the "Franklin" and ordered to the Navy Yard, Washington, D. C.

G. W. SHEPARD, assistant surgeon. Appointed assistant surgeon from Oct. 25, 1907.

R. A. CAMPBELL, acting assistant surgeon. Ordered to the "Franklin."

J. C. THOMPSON, surgeon. Detached from the Naval Station, Olongapo, P. I., and ordered to the "Chattanooga."

R. T. ORVIS, surgeon. Detached from the "Chattanooga" and ordered home.

I. F. COHN, assistant surgeon. Detached from the "Elcano" and ordered to the Naval Station, Olongapo, P. I.

SOCIETY NOTICES.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY IN CONJUNCTION WITH THE BOSTON MEDICAL LIBRARY MEETING. — Wednesday, Nov. 13, 1907, at 8.15 P.M., John Ware Hall. The Treatment of Inoperable Sarcoma with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus; Dr. William B. Coley, New York. 1. Method of Preparation with Recent Modifications; 2. Technique of Administration; 3. Indications for Use; 4. Prognosis, as determined by Analysis of Final Results. Trypsin in the Treatment of Cancer, Dr. Wm. P. Graves. Discussion by Dr. R. C. Larrabee. Light refreshments after the meeting.

J. C. MUNRO, *Chairman.* J. C. HUBBARD, *Secretary.*

NEW YORK ACADEMY OF MEDICINE. — The anniversary meeting and reception will be held Friday evening, Nov. 29, at 8.30 o'clock. The anniversary discourse will be delivered by Col. W. C. Gorgas, M.D., U. S. A., chief sanitary officer, Isthmian Canal Commission. Subject, "Sanitation of the Canal Zone." Stereopticon illustrations. Fellows desiring extra invitations will please notify the committee on anniversary meeting.

ERRATUM.

The word suggested by Dr. Edward A. Ayers, in his recent Carpenter Lecture, to best name in one word, instead of a phrase, an important class of diseases, was "homomosquitic," and not "homosquitic" as given in our report.

RECENT DEATHS.

CHARLES WILLIAM BURTON, M.D., M.M.S.S., died in Adams, Oct. 5, 1907.

CHARLES BRET POOL, M.D., M.M.S.S., died recently in Lowell, aged thirty-eight years.

HENRY RUPERT BRISSETT, M.D., M.M.S.S., died in Lowell, Oct. 18, 1907.

DR. FRANK HENEL, of New York, died on Oct. 28. He was graduated from the medical department of the University of the City of New York in 1875, and was for some time in the service of the Health Department. For many years he was associated with the municipal institutions on the East River islands, and at the time of his death was consulting physician to the City Hospital and the Randall's Island Hospital.

DR. SETH D. CLOSE, of New York, committed suicide by taking strychnine on Oct. 29. He had been suffering for some time from melancholia, and had only recently returned, in apparently improved condition, from the Rivercrest Sanitarium at Astoria, where he had been under treatment for several weeks. Dr. Close, who was a well-known and highly respected practitioner in the Borough of the Bronx, was fifty-six years of age at the time of his death. He was born in Geneva, N. Y., and was graduated from the College of Physicians and Surgeons, New York, in 1876. He had lived for more than thirty years in the house where he died, and had seen the neighborhood which, at the time he took up his residence there, was a portion of Westchester County, change from a distinctly rural one to a thickly populated city suburb.

DR. V. PLOWDEN MCLAUGHLIN, of New York, died suddenly on Nov. 2 at Saranac Lake, in the Adirondack Mountains.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Orthopedic Surgery. By Augustus Thorndike, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. XIX. For the Year 1906. New York. 1907.

The Opsonic Index in Diabetes Mellitus. By John C. Da Costa, Jr., M.D.

Elements of Physics. For Medical Students. By Frederic James M. Page, B. Sc. (Lond.), F.I.C. Illustrated. Chicago: W. T. Keener & Co. 1907.

Nierendiagnostik und Nierenchirurgie. Von Dr. G. Kapsammer. Illustrated. Parts I and II. Wien and Leipzig: Wilhelm Braumüller. 1907.

Kirkes' Handbook of Physiology. Revised and rewritten by Charles Wilson Greene, A.M., Ph.D. Sixth American revision. Illustrated. New York: William Wood & Co. 1907.

The Commoner Diseases of the Eye. For Students of Medicine. By Casey A. Wood, M.D., C.M., D.C.L., and Thomas A. Woodruff, M.D., C.M., L.R.C.P. (London). Third edition. Illustrated. Chicago: W. T. Keener & Co. 1907.

Blood-Stains: Their Detection, and the Determination of Their Source. A Manual for the Medical and Legal Professions. By Major W. D. Sutherland. New York: William Wood & Co. 1907.

A Plea for Uniformity of Tests for Albumin and Sugar among Medical Examiners. By J. Bergen Ogden, M.D. Reprint.

JOHNS HOPKINS HOSPITAL NOV 18 1907

Original Articles.

MUSCLE AND TENDON TRANSFERENCE.

BY E. H. BRADFORD, M.D., AND ROBERT SOUTTER, M.D., BOSTON.

THE following paper is based upon an analysis of 35 cases, with periosteal insertion and silk strand elongation, including one case of silk suture elongation of the hamstring to the os calcis, and two cases of pectoral trapezius anastomosis.

This procedure in surgery has already won its position in the list of surgical methods, but as there is still much discussion in regard to the question of technic, the careful recording of cases is at present desirable. The following cases are presented as indicating the results which can be obtained by the exercise of ordinary care.

The writers record their appreciation of the great value of the method of extending tendons by the use of silk strands. They wish to emphasize the necessity of the following points: First, the avoidance of disturbance of tissues as far as possible; second, the necessity of thorough asepsis, not simply such as is ordinarily necessary in surgical procedures, but in the preparation of the skin.

Silk strands have been, as a rule, used after having been boiled twice; in some instances the second boiling has been in a corrosive sublimate solution, in others, the simple boiling has been employed. They have not found that any particular advantage has followed, as far as they can determine, the boiling in sublimate claimed by Lange to be essential. As the number of cases is not large, definite claims cannot be made, but it is clear that the danger is not as great from silk not boiled in sublimate as has been suggested.

The dipping of the sterilized silk in solutions of celluloid has been used in one instance, and the method is open only to the objection of increasing detail.

The patient's skin has in two instances been protected with the ordinary means of sterilization by painting with iodine, and afterwards by painting with a solution of rubber in ether over the field of incision. This latter was applied to one limb, and where the other limb was also operated on the ordinary means of sterilization were all that were used. No perceptible difference was noted in this instance, and in the other cases the method was not used in order to avoid multiplication of details.

It is seen that in some of these cases a healing by first intention is not obtained. It can, however, be claimed that such a rule is regarded as desirable in all instances, and can be attained by the most careful attention to detail. It is for that reason, probably, that it is desirable, even at the expense of the multiplication of details, to carry out most thoroughly means for skin sterilization and for other sterilization.

It is desirable that the patients should be kept in a plaster fixation for as short a time as possible, plaster only being applied for a sufficient length of time to secure a healing of the skin incision, and a reasonably strong tissue healing.

After this the apparatus treatment should be begun, with apparatus devised in such a way as to prevent any strain upon the transferred tendon. Massage, muscle training and graded exercises are essential in the after-treatment for several months.

It cannot be claimed that a complete restoration to normal strength can be accomplished in tendon transference. In many instances little can be accomplished, as it is impossible to transfer muscles effectively, if there are no strong muscles to be utilized; but in the larger number of cases considerable benefit can be obtained, and in a certain number surprisingly good results can be secured.

The method of tendon arthrodesis, as described by the writer in an article presented to the society two years ago, has been performed three times. The ultimate result after three years in one case was extremely satisfactory; a sloughing out of one strand delayed the cure in the second case, and in the third case the final result cannot be determined, as the operation has only been recently performed but in both cases excellent results are promised.

An analysis of cases of tendon transference chiefly without silk strand elongation, treated at the Boston Children's Hospital for the previous ten years, was reported two years ago.

The following cases are additional ones, operated upon by the writers, both at the Children's Hospital and elsewhere, with the transference of tendons lengthened by silk strands.

TENDON TRANSFERENCE WITH SILK ELONGATION FOR DEFORMITIES OF THE FOOT.

CASE I. J. B., age, ten years. Operation, Sept. 7, 1905. Infantile paralysis, requiring transference of the tibialis posticus and a portion of the flexor communis digitorum into the scaphoid and cuboid for paralytic equino-varus. The result early in the year 1906 was good, with power of dorsal flexion and good adduction. The patient walks without apparatus.

CASE II. M. M., age eight and a half years. Operation August, 1905. Paralytic calcaneus. Wedge section of the os calcis, with the transference of the tibialis posticus with an insertion on the calcaneus. Silk elongation. Results, Nov. 14, 1905, good position.

CASE III. E. L. R., age eight years. Operation, September, 1906. Infantile paralysis with foot drop, requiring transfer of two slips of common extensor of toes to cuboid, and two other slips to the inner side of the foot inserted into scaphoid. Result, better position, without gain in motion.

CASE IV. M. O., age seven years. Operation September, 1905. Peroneus longus and one half of the tendo Achillis into anterior part of astragalus by means of silk.

Result, in good position of foot. Has not reported recently to ascertain motion.

CASE V. M. W., age ten years. Operation August, 1906. Paralytic varus requiring the transfer of two slips of extensor of toes by silk into periosteum of cuboid, and removal of a wedge from the outer part of os calcis.

May, 1907, the foot is held in good position and has gained in motion and function. (Fig. 1.)

CASE VI. J. K. B., age five years. Operation Aug. 8, 1905. Half of the tendo Achillis was split and

brought forward and inward by silk elongation into the scaphoid. The result, when last examined, was good as to position and use.

CASE VII. F. B., age eight years. Operation Aug. 11, 1905. For paralytic equino-varus. Half the tendo Achillis was brought forward to the scaphoid and cuboid by tendon transference with silk elongation, shortening of the tibialis anticus and peroneus longus. Result, good position and functional use.

CASE VIII. R. C., age nine years. A similar condition justifying a similar operation Aug. 16, 1905, with an excellent immediate result. March 19, 1907.

CASE IX. A. F., age ten years. Operation August, 1905. Equinus; insertion of half of the tendo Achillis elongated by silk strands into the scaphoid. Good result in motion and position. March, 1907.





M. W. CASE V. FIG. 1.

Transference of flexor communis digitorum, with silk strand insertion on inner and outer sides of dorsum of the foot to correct front foot drop.

Other view of Fig. 1, showing the regained power of raising front of foot.

CASE X. E. R., age nine years. Operation Aug. 22, 1905. Insertion of a portion of the flexor communis digitorum and a portion of the tendo Achillis into the scaphoid and cuboid by silk elongation; stretching of the hamstrings. Result, good position, and more motion. March, 1907.

CASE XI. W. M. K., age eight years. Operation Aug. 22, 1905. For equino-valgus. Transference of a portion of the flexor communis digitorum and of the tendo Achillis to the scaphoid by silk elongation, with tenotomy of the tendo Achillis. More motion and better position "when he tries." March, 1907.

CASE XII. A. C., age eight years. Operation Aug. 24, 1905. Paralytic equino-varus. Osteotomy of the scaphoid and os calcis, foot twisted and tenotomy of the tendo Achillis. More motion, good position and use of foot. March, 1907.

CASE XIII. G. D., age six years. Operation Aug. 28, 1905. Paralytic equino-varus. Transference of two slips of the flexor communis into the cuboid, tenotomy of the tendo Achillis. Result, good position and use of the foot; a little more motion and better position. March, 1907.

CASE XIV. M. B., age seven years. Operation Sept. 7, 1905. Paralytic valgus. Transference of the peroneus longus and half of the tendo Achillis into the anterior part of the astragalus. Tenotomy of the tendo Achillis. Silk elongation. Immediate result satisfactory. Final result not known.

CASE XV. J. K. A., age seven years. Operation Sept. 26, 1905. Paralytic varus. Transference of outer half of the tendo Achillis into the cuboid with silk elongation. Operative result satisfactory. Ultimate result not known.

CASE XVI. H. A. R., age eighteen years. Operation, August, 1906. Infantile paralysis when ten years of age; worn apparatus for some time. Foot drop. The flexor longus transferred and silk strands inserted into the dorsum of the foot; shortening of the common extensor of the toe; tenotomy of the tendo Achillis. The wound healed, except a superficial granulation in some portions of the incision. The result three months after the operation was good, position of the foot and slight muscular power of flexion. Result, nine months later, good position and function and gain of movement in all directions in the foot. The foot drop.

CASE XVII. E. R., age five years. Operation June, 1906. Transference of a portion of the flexor communis digitorum by lengthened silk strands into the dorsum of the foot with two insertions, one on the inner and the other on the outer side. The immediate result was healing by first intention with good position. Ultimate result not yet determined.

CASE XVIII. R. W., age sixteen years. Operation August, 1906. Slip of flexor longus digitorum inserted by lengthened silk strands, both externally and internally, into the dorsum of the foot. Healing by granulation. Ultimate result six months later reported to be good.

CASE XIX. E. S., age three years. Operation April, 1907. Tendon transplantation of common flexor, lengthened by silk strands and inserted on the outer and inner side of the foot. Healing by first intention. Ultimate result not yet determined.

CASE XX. F. W., age ten. Operation September, 1906. Infantile paralysis requiring transfer of outer portion of common extensor of toes into cuboid by means of silk. Tenotomy of plantar fascia and tendo Achillis. A wedge was removed from the outer part of the astragalus. Good position of foot for use and function. March, 1907.

CASE XXI. E. W., age seven. Operation April, 1906. Infantile paralysis, requiring tenotomes and transfer of peroneus longus by means of silk strand to periosteum of scaphoid and shortening of paralyzed tibialis anticus and of extensor of toes. Result, March, 1907, better position of foot, some motion at point of transfer.

TENDINOUS FIXATION OF THE ANKLE JOINT FOR FRONT FOOT DROP.

Two cases of this procedure were reported in a previous paper. The operation being indicated where the paralysis is so extensive that no muscles offer sufficient strength for transference, the following three cases are mentioned, although recently performed, as suggesting some operative details. In the previous operations the silk strands were passed through a hole drilled in the tibia, and the tendons of the extensor communis were inserted and attached in a chiselled groove in the tibia. In one of these operations some sloughing followed and there was a delay in healing. A good ultimate result finally followed. In

the other cases prompt healing occurred without sloughing of the silk, and there was marked improvement in gait and entire correction of the toe drop. In the four following cases no bone attachment was attempted, the attachments being periosteal.

Case XXII. C. F., age fifteen years. Operation June, 1906. Portions of the tibialis anticus and peronei tendons freed from muscular bellies and sutured to the periosteum of the tibia. Silk strands inserted sub-periosteally in the inner and outer side of the dorsum of the foot. The strands were then passed upwards subcutaneously to the incision on the upper portion of the leg, passing under the annular ligament, and secured into the periosteum surrounding the tibia. The tendo Achillis was divided. The wounds healed by first intention. Ultimate result, nine months later, improved position of the foot. Almost complete correction of front foot drop. Walks without apparatus. March, 1907.

Case XXIII. M. S., age seven years. Operation February, 1907. Silk quilted through the periosteum about the tibia, three inches above the malleoli, passed subcutaneously under the annular ligament, and posterior insertion on the outer and inner side of the dorsum. Anterior tibial and common extensors attached three inches above the joint to the periosteum of the tibia. The wound healed by first intention. Ultimate result, foot held with entire absence of toe drop and with marked improvement in gait. May, 1907.

Case XXIV. R. P., age eight years. Operation April, 1907. Complete paralysis of the extensor communis, peronei and tibialis anticus. The silk strands were quilted in the upper end into the periosteum of the tibia three inches above the ankle joint. The silk strands were then passed under the annular ligament and inserted on to the dorsum on the outer and inner side of the foot. A split portion of the tendo Achillis was removed and transferred, with silk elongation inserted into the outer and inner side of the dorsum of the foot. Strands from the tibialis posticus and tibialis anticus were dissected off three inches above the ankle joint and stitched by quilting stitch into the periosteum around the tibia. The tendo Achillis was divided. Immediate result, healing by first intention, with good foot fixation.

Case XXV. M. S., age seven. Operation February, 1907. Silk strands passed through tibia and made fast to cuboid on one side and to scaphoid on the other, holding the foot at right angles. Result, foot held at right angles.

As the operation in the last two cases is recent, the ultimate result is at present undetermined, but there seems no reason to think that the usefulness of the limb will be less good than in the other cases previously reported.

TENDON TRANSFERENCE FROM THE HAMSTRINGS TO THE OS CALCIS BY ELONGATED SILK STRANDS.

Case XXVI. E. D., age eight years. The following unusual operation, performed by Dr. Soutter, August, 1905, is of clinical interest, particularly from the fact that the procedure is an unusual one. The soleus, extensors and plantaris were paralyzed, the foot being held in the position of calcaneus. There was no flexor function of the toes, but there was good power in the hamstrings. A silk strand was quilted into the semimembranosus and extended downward and fastened to the os calcis.

The case was lost sight of for over a year, and when examined, the attachment of the silk in the os calcis was firm. The patient walked without the calcaneous deformity, there was tendency to valgus and abduction of the front of the foot existed; but after four weeks of muscle training, the foot could be extended in the plantar flexion direction without flexion of the knee. The foot is held, at present, a year and a half later, in a good position, and some flexion in the toes is possible. May, 1907. Plantar flexion of the foot, due to the transfer, is strong enough for use.

FOOT AND KNEE.

Case XXVII. H. M., (1) age eight years. Operation April, 1907. Transference of portions of the flexor communis, lengthened with silk strands inserted into the outside and inside of the dorsum of the foot. External hamstrings lengthened with silk inserted subperiosteally on either side of the patella, and continued and inserted into the tubercle of the tibia.

This operation was performed on the left leg. In the right foot, transference of portions of the flexor communis, with extension of silk strands and insertion on the outer and inner side of the dorsum of the foot. Healing by first intention throughout. Immediate result, good position and slight gain of motion. Ultimate result not yet determined.

Case XXVIII. W. D., age twelve years. Operation January, 1907. Paralysis of the quadriceps extensor, tibialis anticus and peronei. Transference of outer hamstrings, with silk elongation to the patella and tibial tubercle. Transference of the flexor longus with silk strands inserted into the dorsum of the foot. Healing in part by first intention, and in part by skin granulation. The present result is good position, with slight muscular power in all directions. Under gymnastic exercises this is increasing.

Case XXIX. M. H., age eight years. Operation August, 1906. Tendon transference of the flexor longus digitorum with silk insertion in the anterior portion of the foot; transference of the gracilis and a dissected portion of the iliotibial band serving as tendon of the tensor vaginæ femoris into the patella by silk strands, and into the tubercle of the tibia. Healing by first intention, except the incision on the inner side of the hamstrings, which healed by granulation. Condition, April, 1907, excellent, with power of motion in extending the leg, and complete cure of toe drop, with slight motion in foot extension, abduction and adduction.

Case XXX. R. R., age seven years. Operation July, 1906. Tenotomy of both tendines Achillis. Transference of a portion of the iliotibial band; gracilis and semimembranosus inserted into the patella. More motion, good position. April, 1907.

Case XXXI. J., age twenty years. Operation Feb. 22, 1906. Paralysis left leg, extensor communis, and dorsal extensors of the foot. Outer hamstring was transferred forward with silk elongation, and inserted into the patella on both sides and on the ligamentum patellæ. Transference of flexor communis with tenotomy of the tendo Achillis. Wounds healed by first intention, except two incisions, which healed by granulation. At present, April, 1907, absence of foot drop, and slight power in motions in all directions of the foot and at the knee.

Case XXXII. S. M., age nine and one half. Operation Sept. 19, 1906. Semimembranosus transferred with silk strands to patella, and flexor longus digitorum put into cuboid. Tendo Achillis lengthened by tenotomy. Patient had complete paralysis of the other leg, and for four years previous to operation he crawled on his abdomen, using his hands for locomotion. March, 1907, his uncle reported that he was walking on the operated leg and crutches.

CASE XXXIII. H. W., age seven. Operation September, 1906. Infantile paralysis, requiring transfer of semimembranosus into the patella, by means of silk strands. Tendo Achillis split and one half carried forward to outer side to cuboid. Immediate result good. Ultimate result not known as yet.

SHOULDER.

The writers have already reported two cases of transference of a portion of the trapezius to the insertion of the deltoid for deltoid paralysis. They are able to add three cases of shoulder paralysis. In two the pectoralis major was cut down upon and a portion of the muscle freed and the same thing done with the trapezius; the separated muscular bands were united firmly. Giving an insertion of the elongated trapezius into the humerus.

CASE XXXIV. E. W., age five years. Operation July, 1906. Paralysis of the deltoid and triceps, with some power of the outer part of the biceps. The pectoralis muscles strong as was also the trapezius. Transference of portion of the trapezius forward with silk strands elongation into a portion of the tendon of the pectoralis major, which was freed from its muscular attachment, making for it an insertion into the humerus. The wound healed by first intention, and the ultimate result to date is restoration of the power of elevating the arm 45° above the height of the shoulder, with some anterior motion.

CASE XXXV. B., age eight years. Operation September, 1906. Paralysis of the right deltoid, but with some strength in the biceps. Transference of the trapezius with silk elongation insertion into the periosteum at the place of the deltoid insertion. Result, February, 1907, patient has improved power, can elevate the arm above the shoulder.

CASE XXXVI. D. R., age five years. Operation 1905. Paralysis of the deltoid, triceps and of biceps. Congenital dislocation of the shoulder subcoracoid. A portion of the trapezius separated from its insertion, one half of the pectoralis major tendon and some muscle fibers cut and separated from the rest of the muscle. This insertion of the pectoralis sutured to the freed fibers of the trapezius, forming an insertion for it in the humerus. One year later good use of arm in anterior motion and without tendency of shoulder to drop subcoracoid.

The after-treatment in these cases consisted of fixation of the arm by plaster of Paris bandages in a position extended above the head, so as to raise as far as possible the inserted portion of the muscle. Plaster of Paris fixation was continued for six weeks. The arm was then placed in a less elevated position by a second plaster bandage, which was worn for a month. Later a right-angle wire arm support, keeping the arm and hand at right angles with the trunk, was worn, accompanied by beginning use, gymnastics, etc.

The result in these cases up to date corresponds with the result in two previous cases reported in the previous paper two years ago, the result of which has continued to be as satisfactory as when reported.

The details of the operative procedure in all these cases varied but slightly. They were all performed upon cases with slight or no resistant deformity, beyond tendon shortening, and without great structural changes of tendon and muscular tissue. In all cases complete correction by force or tenotomy or both of the existing deformity was made before the muscle transference, with overcorrection in the resistant cases. The silk strands were inserted by quilting in the divided tendon, which was cut off as low down as possible. As small skin incisions were made as were feasible, but enough to expose adequately the muscle and tendon, and to enable the tendon to be transferred with as little of an angle of the transferred tendon as possible.

The transferred tendon or strand was covered by fascia specially sewed over it independent of the sewing of the skin incision. As a rule, no drain was placed in the wound, which was sewed up by catgut. The limb was placed in a moderately corrected position in a plaster bandage. As a rule, the wound was not examined for ten days or a fortnight. In most of the cases reported, the wound healed by first intention, either entirely or partially. In portions of the wounds there was superficial gaping. In none of the cases was there any evidence of sepsis, and no sloughing out of the tendons, although in the first cases operated upon by silk transference five years ago, sloughing of the silk occurred in five instances.

The periosteal insertion on the dorsum of the foot was made with care, a curved handled needle being used, taking a firm grip upon the periosteum. Bone drillings were not used.

The usual after-treatment in these cases was plaster fixation for two months, followed by apparatus which would prevent toe drop or abnormal strain, followed, when practicable, by muscle training, massage and gymnastics for several months.

It is difficult to determine in all cases when plaster bandage fixation should be omitted, and some functional activity of the muscle allowed. The matter is one of judgment and no fixed rule can be stated, as much depends upon the weight of the limb and the age of the patient. It may be considered as a general proposition that as soon as firm healing has been established, slight functional activity of the transferred muscles should be allowed in order to favor the formation of strong tissue.

In order to obtain the best ultimate result, the cases should be followed carefully, with a well-regulated treatment directed to the development of the weakened muscles; in many instances much gain can be effected in muscles previously considered beyond repair.

In cases of this class it is difficult to record and report the exact degree of improvement, as a slight amount of gain in a muscle apparently incapable of exerting functional power justifies in a child an expectation of greater gain under persistent care.

In the cases here reported all apparatus was removed at the end of either six or nine months following the operation, and in many cases increasing improvement followed the release from apparatus, with a gain of power from use.

The conclusions which the writers have drawn from their cases of tendon transference is in accord with the experience of many other surgeons, viz.:

That tendon transference is a procedure which offers with a minimum of risk a chance of great benefit. In none of the cases reported were the patients not benefited by operation, either by an improved position, or gain in functions. The immediate result in all was favorable, and the ultimate result in a number of cases surprisingly good.

A comparative study of the writers' cases previously treated by simple tendon transference without periosteal insertion and of tendon shortening of the relaxed tendons with the results gained by the careful employment of silk strand elongation of efficient muscles and periosteal insertion into selected and mechanically favorable points on the foot and tibia, demonstrates the superiority of the newer over the older method.

The strictest aseptic and antiseptic precautions are demanded. All of the operations herein mentioned were performed not only with all aseptic details as to the patient, instruments and dressings, but with the use of gloves and masks by the surgeon, his assistants and the assisting nurses.

The amount of benefit finally gained in function and correction of disability is in favorable cases so great as to justify an expectation of equal benefit in all cases. Even in extensive paralysis something can often be done to improve the condition.

THE SEASHORE TREATMENT OF THE TUBERCULAR ARTHRITIS OF CHILDREN.

BY ALBERT H. MILLER, M.D., PROVIDENCE, R. I.

Tubercular arthritis is esentially a disease of childhood, 85% of the patients who have applied at the Rhode Island Hospital for treatment for this condition having been under fifteen years of age. The course of the disease is chronic, its duration, for years, attended with the formation of abscesses and discharging sinuses and usually terminating fatally from tubercular meningitis, tubercular peritonitis, or some other intercurrent disease as the immediate cause of death.

The treatment of these cases has consisted of immobilization of the affected joints by braces or plaster casts and of various surgical operations for the removal of pus and diseased bone, or for the correction of deformities. Although this treatment has been efficient in diminishing the deformities of those patients who have survived, it has had little effect in lessening the suffering and fatality of the disease.

It is urged, with some appearance of reason, that an attempt to save the lives of patients with tubercular joint disease is opposed to the law of the survival of the fittest, and that these children should be allowed to die rather than to grow up deformed, to pass on their tubercular taint to succeeding generations. Opposed to this argument, is the fact that these crippled children suffer tremendously, not only the acute pain of burrowing abscesses and of muscular spasm, but also the constant discomfort from restraint of motion. Whatever our ideas may be as to the value of their lives, we must unite in believing that any time spent in freeing their distorted little bodies from suffering is time well spent.

Following the lead of the Children's Island Sanitarium at Marblehead and the Sea Breeze Sanitarium at Coney Island, the Rhode Island Hospital, in the summer of 1906, first opened the ward for the seashore treatment of the tubercular arthritis of children. The entire expense of the work was defrayed by the late James A. Garland, whose death cast a shadow over the last weeks of the summer's work. The Garland ward was located thirty-five miles from the city of Providence on Conanicut Island, in Narragansett Bay, where an old hotel, with good bathing facilities, was converted into a temporary hospital. This institution was open from the middle of July to the first of October.

There were 32 patients, 11 of whom came from the wards of the hospital in Providence. A great deal of care was taken in the selection of the patients. They were children under sixteen years of age, who were afflicted with tubercular arthritis and belonged to the following classes:

First, cases of extreme severity.

Second, patients living amid improper surroundings with insufficient nourishment.

Third, cases steadily failing from any cause. There were 20 boys and 12 girls. The average age was nine and one quarter years. The youngest was fourteen months old. In 14 cases, the hip was affected; in 9, the spine; in 7, the ankle; in 1, the knee and in 1, the shoulder. The duration of the disease had been from six months to eleven years. The average duration had been three and one-half years. Every patient had at some time been in the hospital for a period varying from one to thirty months. Twelve children had a total of 25 suppurating sinuses.

Realizing the influence of bad surroundings and improper food in the development of the disease, the treatment was largely hygienic, drugs being used only in an occasional emergency and no operating being done at the summer branch. Fresh air day and night, sea bathing, an abundance of nutritious food and freedom from restraint, both mental and physical, formed the basis of the treatment.



Seashore treatment of tubercular arthritis. The simple extension straps employed.

From sunrise to sunset, the children lived out of doors and the windows of their sleeping rooms were never closed. All the patients bathed in the salt water, as many as possible bathing every

day. The bath, which usually began at two in the afternoon, lasted for half an hour. The bathing was the feature of the day's pleasures.

Patients wearing hip braces bathed twice a week. Extension was made by two strips of ZO adhesive plaster two inches wide, one on the outside extending from the great trochanter to the knee and the other from an inch below the perineum to the inside of the knee, each terminating in a strip of one inch webbing which reached to the foot-piece of the brace. This arrangement of the extension, which could be removed and replaced every third day without irritating the skin, was free from the objection of pulling on the knee. On the bathing day, the brace and extension straps were removed and the patient bathed in the sea water. Every precaution was taken against movement of the affected joint while the brace was off, and as soon as the bath was over the patient was dried and the brace and extension were replaced.

Patients with plaster jackets were allowed to wade every day. Patients in bed were bathed every day on a frame or in a basket which was wheeled into the water.

Surgical dressings were done after the bathing hour. No chemical antiseptics were applied to the wounds. Drainage tubes and gauze packing of sinuses were not allowed. The soiled dressing was removed, the surface dried, and a sterile pad applied, which remained until after the next bath. On the days when the patients did not bathe in the ocean, the wound was cleansed with salt solution and a fresh pad was applied.

The diet comprised cereals, bread, crackers, meat, fish, vegetables, fruit, simple desserts, several eggs a day and two quarts of milk for each patient. Meals were served five times a day: at seven and ten o'clock in the morning, at noon and at three and five o'clock in the afternoon. Except breakfast on the piazza, meals were served picnic fashion on the lawn, on the beach, or wherever the children happened to be at the time. The patients developed astonishing appetites.

Every thing possible was done to make the patients happy and contented. Only a few rules were made; but these were rigidly enforced. The affected joints must at all times be kept quiet. With this exception, activity was everywhere encouraged. The patients played games, held baseball matches, wrestled, swam in the ocean, and had as good a time generally as any group of well children could enjoy.

This treatment was so radical a change from accepted orthepedic ideas that, day by day, the effects were carefully watched. The results were so good as to leave no room to question the wisdom of the methods used.

Eleven patients had come from the wards of the hospital; 12 had come in beds or wheel chairs;



Seashore treatment of tubercular arthritis. The patients shown above comprise ten tubercular hips, six spines, five ankles and one tubercular knee.

13 on crutches; and 7 walking unaided. At the end of two and one-half months' treatment, it was necessary to return only 2 to the hospital wards; 2 were in beds or wheel chairs; 18 on crutches; and 12 walking unaided.

An increased mobility with loss of sensitiveness was noted in the affected joints. The gain in weight averaged 2½ lb. per month. The greatest gain was 7 lb. in one week.

Of the 25 discharging sinuses, 11 were entirely healed. All sinuses were improved and several healed soon after the return from the summer hospital. Eight bed sores on one patient were entirely healed.

It was interesting to watch the condition of the patients during the winter following their first outing. They uniformly continued to improve for a time after returning to their homes. No one of the sinues which had healed broke out again. In most cases the improvement continued, but two patients began to fail after a few months and in the spring of 1907 were in practically the same condition as a year before. The cause of this failure was directly traceable to the surroundings and insufficient nourishment to which they were subjected.

With a plan of treatment so different from the accepted orthopedic practice, the results obtained are so far superior to those to which we have been accustomed that even our limited experience seems to have demonstrated as true the following principles:

1. Fresh air and an abundance of food, combined with sea bathing and freedom from unnecessary restraint, bring about a continuous, uniform and rapid improvement in all cases of tubercular arthritis of children.

(*a*) Orthopedic restraint should be applied only to the joint affected. Otherwise, activity should be encouraged.

(*b*) The beneficial effect of sea bathing more than compensates for any theoretical injury done by leaving off orthopedic apparatus for a short time daily.

2. Tubercular sinuses which are bathed in sea water daily and which have no other treatment save a protective dressing improve with surprising rapidity.

In most of the cases of tubercular arthritis, the patients are so improved by the summer treatment that they can safely return to their homes for the winter. A few cases require treatment during the whole year.

In preparing this paper, I have drawn freely from the report of the committee, consisting of Dr. Halsey DeWolf, Dr. J. M. Peters, and the present writer, who had charge of the Garland ward in the summer of 1906. The work is now being continued for the second year at the Crawford Allen Memorial, a branch of the Rhode Island Hospital, situated eighteen miles from Providence, on the west shore of Narragansett Bay.

An oil portrait of Dr. John Guiteras has been hung in the eastern amphitheater of the medical laboratories of University of Pennsylvania.—*Jour. Am. Med. Asso.*

Clinical Department.

TWO CASES OF HEMORRHAGE FOLLOWING THE REMOVAL OF THE TONSILS.

BY E. A. CROCKETT, M.D., BOSTON.

For about eight years I have been using, for the removal of nonadherent large tonsils, a Farlow tonsil snare, threaded with No. 5 steel piano wire, and in adherent tonsils it has been my practice to dissect off the tonsil with a Leland tonsil knife and then apply the snare as in the nonadherent type, removing such fragments of the tonsil as might remain with the tonsil punch. Prior to this method, I have been using either the tonsillotome or a long throat knife or scissors, and under this method of operation have had a number of severe hemorrhages, which several times succeeded in alarming me, but which always checked under pressure for a few moments without exsanguinating the patient.

Until last spring I had never seen a hemorrhage of even ordinary severity follow the use of the snare, and in addition have seen the tonsil more completely removed than by any other method of operating which I have ever employed, and have been accustomed to say that a severe hemorrhage was impossible to be obtained by this method.

About a year ago, I began threading my snare with a steel wire two sizes larger than the No. 5 formerly used. This wire makes a loop much easier to apply to the tonsil, but it does not apply itself so flexibly to the tonsil to the exclusion of other tissues as does the No. 5. I noticed, as soon as I began to use it, that the snare bit deeper into the tonsil fossa than I had been accustomed to see, but still I had no trouble until the first of the two cases reported to-night. It seems to me possible, although I am not convinced of it in my own mind, that this hemorrhage may have been caused by the use of this nonflexible wire. At any rate, I shall use in the future the No. 5, until I see some reason to change my opinion.

Case I. The first was a boy about eight years old, who had two large nonadherent tonsils and a large central adenoid. The child was evidently in perfect physical health and there was no history of hemophilia. The two tonsils were very easily removed, anterior and posterior pillars were not wounded. After removing the right tonsil, I remarked to my assistant that the tonsil was removed unusually successfully, that the cavity remaining was unusually deep and that I could see a small spurting point from the upper anterior face of the posterior wall of the cavity. The spurting point was small and was about the size of the vessels cut in a mastoid operation. I held a sponge against it for about three or four minutes and then, the bleeding having apparently ceased, proceeded to remove the adenoid. The last thing before I stopped the operation, I wiped out the right tonsil cavity and could see no sign of hemorrhage.

About three hours after the operation I received a telephone message from the hospital saying that they thought that I had better come at once. As I was in the middle of my office hours, I asked Dr. Powers to go around first, as he was nearer, and I followed as soon as

possible. He probably arrived there within five minutes and I within ten minutes of the first alarm. When I saw the child he was completely exsanguinated and the radial pulse could not be felt nor could I be sure that I felt the carotid pulsation. The hemorrhage had been checked on Dr. Powers' arrival by digital pressure of the right tonsillar cavity. This was kept up until a tonsil clamp could be procured and placed on (perhaps half an hour) and it may be known that the child was in pretty bad condition when I say, there was absolutely no resistance made to putting a gag in the mouth and holding three fingers firmly against the side of the tonsil space during all this time. A pint of salt solution was given subcutaneously in the breast and two pints by rectum soon afterward. The child's pulse began to come back after the first subcutaneous infusion and could be counted at 160. Dr. Powers thought he had previously counted it at 200, but I could not be sure of this. Later on it fell to 140.

The tonsil clamp when applied was kept on about eight hours and when removed there was a large dark blood clot at the fossa. No further hemorrhage resulted. The child was completely prostrated and did not leave the hospital for ten days, during all of which time he ran a temperature from 100 to 102. He was extremely pallid and the throat was more septic than any throat I have ever seen. The child did not recover from the operation sufficiently to go to school for six weeks.

The nurse said that during the three hours between the operation and first alarm she had noticed no more than the usual hemorrhage until the child began to vomit and vomited fresh blood. The hospital where I performed the operation was within three blocks of my office. Had it been much further off, I do not question the case would have been dead before it could have been reached. It certainly was more exsanguinated than any case I have ever seen.

CASE II. About four months afterward, I operated on a twelve-year-old girl in Auburndale, again with large nonadherent tonsils and not having learned wisdom by experience began with the same technic of operation. Tonsils easily removed; pillars not wounded. The nurse in attendance said that the first sign of hemorrhage was observed about two hours after the operation. After a good deal of telephoning she succeeded in getting Dr. Hammond out about three hours after the operation, and I arrived about four hours after the operation. The hemorrhage, according to the physician who was one of large experience in throat cases, was very profuse, filled the throat so that she was unable to tell which tonsil it came from, consequently, it was impossible to apply the tonsil clamp. The family showed Dr. Hammond a basin which contained about a quart of blood, but they and the nurse said it did not equal all the girl had vomited. The hemorrhage had checked itself before Dr. Hammond arrived. The girl was pallid and the pulse was 130 to 140; she had sighing respiration and a good deal of faintness and complaint of thirst. A large clot of blood could be seen in the space of which one of the tonsils had been removed. The case was watched for about eight hours and then transferred in an ambulance to the Newton Hospital, not far away. She was unable to stand up and remained in bed for about eight days after the operation, but recovered perfectly.

It seems to me that these two cases which are being reported should be placed upon record. One lesson which I certainly learned from them is that I should never again remove the tonsils under any consideration unless the case is willing to come in town and be near my office for twenty-four hours after the operation. The first case would undoubtedly have died had it been anywhere but near my office. The second case would unquestionably have died before help could have reached it, if it hadn't been that the hemorrhage ceased itself. In addition, I should advise No. 5 steel wire in threading the tonsil snare.

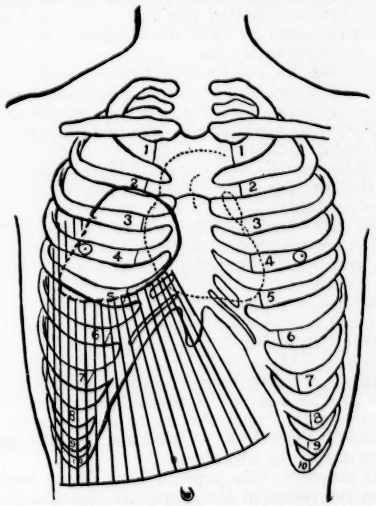
CONGENITAL DEXIOCARDIA.

BY W. F. DOOLITTLE, M.D., CLEVELAND, OHIO.
From the Cleveland City Hospital.

THE following described case of unusual anatomical interest has recently come under my observation.

Mr. F. N. G., aged forty-one, born in the United States, white, mechanic, applied for treatment on my service at the Cleveland City Hospital, May 31, 1907. He complained especially of "a swelling with pressure and distress" in the epigastrium, also of "swollen limbs below the knees, shortness of breath and loss of strength."

The routine physical examination showed among other things a very marked funnel-shaped breast, at whose apex at midsternum a loud diastolic murmur is



heard. By percussion and auscultation the heart was made out, lying entirely to the right of the sternum, which bounded it on the left, as shown in the accompanying diagram. The second rib marked its upper limit. The apex-impulse of the heart was located in the fifth interspace just inside the mammillary line, marking the heart's axis downwards and to the right. A movable dullness in the right axilla reaching to the third interspace obscured the outer border of the heart. Its lower bounds were also hidden by similar dullness fading into the liver flatness, which extended to within an inch of the umbilicus in the median line. The pulse

rate was irregular at 115 to 120 and quite arrythmic. A capillary pulsation was easily demonstrated in the index finger, and the poorly sustained radial pulse on elevation aided in confirming the diagnosis of aortic insufficiency with broken compensation.

As it is not the purpose of this article to dwell on the pathology, it may be dismissed with the statement that rest in bed, moderate doses of digitalis and aspiration of 1100 cc. of serous fluid from the right side of the thorax brought prompt moderation of the symptoms. The orthopnea disappeared, the character of the pulse improved and its rate was at 80 in a few days. Following the tapping the lower border of the liver returned nearly to its normal limits and the epigastric distress then ceased.

However, the removal of the fluid did not alter the area of cardiac dullness. Inquiry of the patient revealed the following interesting facts relating to this transposed organ:

The position of the heart on his right side was noted at his birth by the physician, and the mother's attention was called to it. The patient has a twin sister whom, as a child, he very closely resembled in features, but her heart is normally located. Each of their parents was a twin, but their hearts are said to have been on the proper side. My patient has a wife and a twin son and daughter. The children are about four years old and look just alike. While the girl's heart is placed as usual, the boy's heart is, like the father's, on the wrong side of the chest. Some years ago the wife miscarried a pair of twins at the seventh month. Unfortunately no anatomical examination of the fetuses was made as to the heart's position.

It is of interest that the patient's twin sister also has a pair of twins (boy and girl), four years old, residing in a distant city, who are said to look just alike; but, in their case, my patient "thinks" their hearts are on the left side.

The patient is slightly under medium height, well nourished and claims unusual strength and health until recently. As a child he was naturally left-handed — a functional peculiarity noted in other cases of transposed heart. At school he was encouraged to use the right hand more and so became ambidextrous.

The percussion tone at the apex of the right lung is higher than that of the left — a fact which might be accounted for (in case the lungs are transposed) by the pressure of the right hydrothorax. Still, the character of the sign is but little altered since aspirating.

In conclusion, attention may be called to the following:

Dexiocardia, a local transposition, is comparatively rare and should not be confused with the not uncommon cardiac displacement due to disease. Blodgett states that in the examination of 20,000 recruits for the German army only two cases of dexiocardia were encountered.

The condition is said to have been very exceptionally noted at birth, and generally was not suspected during life.

Ballentyne, in his recent excellent work on "Antinatal Pathology and Hygiene" (1906). states that there had appeared no evidence of the transmission of this anomaly by heredity. He cites E. Rogi's cases of brother and sister as being quite unique as an instance of family tendency.

While dexiocardia is said to have been noted twice the number of times in males that it has in females, which may be accounted for by military and insurance examinations, yet many cases may indicate a tendency for transmission, under certain circumstances, in the male line.

Aristotle was the first to describe transposed organs. It is of further historic interest that the wife of Henry IV of France (mother of Louis XIII) had the heart to the right of the sternum.

Several theories as to the cause of this anomaly have been advanced. However, Ballentyne states that the inverted position of single organs is not to be regarded as directly related to the causes of situs transversus viserum (due to malformation of the germs, Winslow), but is ascribed to local anomalies in development, which belong to a later stage in embryological formation.

AN ABDOMINAL LESION SIMULATING CANCER.

BY BENJAMIN B. CATES, KNOXVILLE, TENN.

In the latter part of March, 1907, I was called in consultation by Dr. J. H. Wilkerson to see Mr. George Dunlap, who was suffering from some obscure trouble in the left lower quadrant of his abdomen.

I obtained the following history:

Mr. Dunlap is a merchant, fifty years old, large-boned, and inclined to be slightly obese. He relates he has always been healthy; but within the last six or seven years has been growing constipated to such an extent that he has had to use purgatives constantly.

Mr. Dunlap further says that on the twelfth of March, 1907, he retired at night as usual, remarking to his wife he "felt better than he had for months and months."

About 1 A.M. on the following morning he was awakened by a sharp pain in the left lower quadrant of his abdomen. The pain became so severe he sent for Dr. Wilkerson, who relieved him by a hypodermic of morphine and a purgative.

However, Mr. Dunlap did not feel inclined to go about his business, and was kept under the constant attention of Dr. Wilkerson.

After a few days of observation, Dr. Wilkerson suggested I be called in to consider the advisability of an operation.

When I saw Mr. Dunlap he was lying in bed, not suffering much pain; he had no inclination to move about. His pulse and temperature were normal, though Dr. Wilkerson said when he first saw Mr. Dunlap he was having fever. His abdomen was not distended.

Superficial palpation showed a slight degree of resistance on the left side, which on deep pressure in the left lower quadrant caused him to flinch and cry from pain.

From a digital examination of the rectum I could discover nothing abnormal, except, four or more inches from the anus I fancied there was a slight bulging of the bowel on the anterior surface. Anyhow, pressure against it caused pain.

With this history and examination I was not satisfied in my mind as to the pathology of the case and made arrangements to see Mr. Dunlap again in a few days. This I did without forming any well defined opinion other than that it was a case for operation.

I, therefore, suggested an exploratory operation, which was accepted.

Accordingly he was removed to the hospital of the Tennessee Medical College, and was operated upon April 4, 1907.

Thinking perhaps I might have an incipient cancer

of the rectum to deal with I made a long incision parallel to and above Poupart's ligament. When I got into the belly I found the pelvic cavity filled with small bowels and so adherent to every thing that I abandoned the first incision for the time being, and opened the abdomen in the middle line, in order that I might have a better field for operation. The small bowels filled the pelvis and hid the sigmoid and rectum from view. In sponging the adhesions apart, I broke into a pocket of foul-smelling pus on the left side of the sigmoid and rectum. I estimated there must have been half a pint of this pus.

While the pus had a foul fecal odor, I did not find any fecal concretions, nor did I find any communication with the bowel.

I then placed the patient in the reversed Trendelenburg position, placed gauze around the bowels, so as not to infect the general peritoneal cavity, introduced cigarette drains from both wounds down to the pocket of pus and closed the wounds down to the drains.

The subsequent steps of the treatment followed was to keep the patient in Fowler's position and to give daily enemas of normal salt solution by Murphy's plan. The patient made a slow but sure recovery, without developing any permanent fecal fistula, though for about a week after the operation the discharges had a decided fecal odor.

The pathology of this case was unique to me, and I was at a loss to account for it, because I had never seen a similar condition in the operating room, nor could I find anything in the literature in regard to it. Hence I called it acute periproctitis, and acute perisigmoiditis.

The etiology of this case was interesting, and in seeking for a cause I accidentally learned from the patient that a few years ago a traveling quack came through the town delivering lectures on "health and how to preserve it." Among other things he taught that people, in order to aid digestion and cure constipation, should eat every day a teaspoonful of sand. So this good man was induced by some friends to eat sand for constipation. This, I thought, may have been the secret of the trouble. The sand might have lodged in some of the folds or pockets of mucous membrane of the sigmoid or rectum and caused ulceration, secondarily setting up suppuration around the gut.

Since writing the above report of my case I have read very interesting reports in *Surgery, Gynecology and Obstetrics* for July, 1907, by Drs. W. J. Mayo, of Rochester, Minn., and George Emerson Brewer, of New York, on "Diverticulitis of the large bowel," that throw a good deal of light on the pathology of my case.

THE CHOLERA SITUATION IN RUSSIA. — According to press dispatches from St. Petersburg, Oct. 31, the latest official cholera statistics for the week ending Oct. 22 show that the epidemic is now being checked with the approach of winter. There were 1,009 new cases reported and 416 deaths were recorded. More than half the number of cases, 569, were in Kiev and Volhynia provinces, where the winter is belated. There were only 103 cases in the four southern provinces and 75 in the five provinces of the Middle Volga region.— *New York Med. Jour.*

Medical Progress.

PROGRESS IN SURGERY.

BY J. G. MUMFORD, M.D., BOSTON.

RESULTS OF THE OPERATIVE TREATMENT OF BREAST CANCER.

(Concluded from No. 19, p. 640.)

HALSTED, more than other writers, distinguishes degrees of axillary involvement, giving four groups of cases depending upon the extent of involvement: (*a*) base of axilla only; (*b*) base and mid-axilla; (*c*) base, mid-axilla and apex; (*d*) veins intimately adherent. He shows how groups *b*, *c*, and *d* are much the most difficult and serious and lead with considerable certainty to an involvement of the supraclavicular region, and he finds this region above the clavicle the seat of disease in a surprisingly large number of cases. Of his 232 cases the neck operation was done in 119; while of the remaining 113 cases, in which the neck operation was not done, 44 were operated upon subsequently. Halsted finds microscopic involvements of the neck glands in great numbers of cases which show no palpable evidence of disease in that region. For this reason, he insists upon the neck dissection in all cases in which the axilla is involved beyond the base. He lays down the following rules: the surgeon should perform the neck operation, "barring, of course, special contra-indications: (1) in all cases with palpable, operable neck involvement; (2) when the apex of the surgical axilla is involved. When mid-axillary involvement is demonstrable at the operation, special implication is almost certain, and hence, (3) in these cases also the neck should be typically cleaned of its lymphatics, as high, at the very least, as the bifurcation of the carotid.

"We find ourselves for the past two years again performing the neck operation in most cases. We omit it in hopeless cases."

As evidence that involvements of the neck do not imply necessarily a hopeless condition, Halsted cites 40 traced cases, in which cancer was found and removed from both neck and axilla. Four of these cases survive the three-year limit, showing us positively good end-results in 10%.

On the other hand, Greenough, and most of the other speakers, conclude from their studies that cancerous glands above the clavicle practically contra-indicate an operation for radical cure. Of 38 cases reported by Greenough, with involvement and removal of the neck glands, none survive. Willy Meyer does not favor the neck operation and finds none of his neck cases alive after a five-year limit. Ochsner dissected the neck seven times in 78 cases. His seven neck cases are dead. The studies and conclusions of these three speakers, however, are by no means as exhaustive and satisfactory as Halsted's, nor is their experience with neck involvements as extensive.

L. S. Pilcher supports Halsted's views in an entirely interesting and convincing paper. The former surgeon has made a painstaking endeavor

to dissect the neck in all advanced cases which have come under his hands during the past ten years, and his success in eliminating completely the disease is excellent. So long ago as 1900 he reported a series of ten cases, from which he had removed cancerous neck glands, with a resulting immunity of 33.3% after three years. He now reports a further interesting group of 18 cases. Taking all of his reported cases from which demonstrable cancerous growths in the neck were removed, Pilcher shows the surprisingly low end-mortality of 64%, so far as now appears,—the best and most encouraging end-mortality statement dealing with these supraclavicular cancer nodes that has been recorded up to this time. He reminds us further of the dense, deep cervical fascia which renders difficult a detection of cancer nodules until they have attained a considerable size, and insists strongly on the importance of the surgeon's recognizing the probability that the supraclavicular glands are infected in every case of extensive cancer of the breast.

Many of the speakers urged again the vital importance of an early *diagnosis* in all cases of breast tumor, and a few had something new to contribute to the subject. All intelligent practitioners now agree that every tumor of the breast should be seen by a competent surgeon, though unfortunately we know that great numbers of breast tumors remain undiagnosticated until the complete operation is hopeless. Vander Veer dwells upon what he calls "the pre-cancerous state, from the nervous condition of the patient," and relates an interesting case in illustration of his contention that frequently patients are convinced of the imminence of a malignant growth long before the surgeon, while often the outcome justifies the patient's forebodings. Vander Veer would not disregard this anxiety.

Halsted finds a great interest in determining the early diagnosis of cancer. Physicians should remember that more than 80% of all breast tumors are malignant, so that the presumption of cancer is ever present, and should warn the optimist when examining a painful or lumpy breast, even in a young woman, that the burden of proof rests upon him to show that the disorder is not cancer. Says Halsted, "It well repays the experienced surgeon to spend perhaps an hour in the examination of certain breasts." We are seeing constantly "smaller and still smaller tumors, cancers which give not one of the cardinal signs." He reminds us of the adenoma in a transitional stage, but more difficult still the tiny retro-mammary adeno-carcinoma, or the colloid carcinoma, in a breast covered with one or more inches of fat. "If in such a case there should be no shortening whatever of the trabeculæ the diagnosis could hardly be made." "But given even very slight shortening of the trabeculæ from tumor to skin, this fact might be determinable by making both breasts take the widest possible excursions on the chest wall under the skin, the faintest conceivable trace of a difference of the two sides, in a minor pectoral crease, for example, may suffice for the diagnosis." "Frequently there is no sign but the almost imperceptible suggestion of pull, which, when the faintest possible, is of course elicited by dislocation in one direction only. This sign, however slight, is all that is needed for the diagnosis." The surgeon must manipulate both breasts in making this test, in order that one may serve as a control. It is interesting to read Halsted's statement that to him, with his enormous experience, the extreme possibilities of the test were not fully realized a decade ago, and that each year it developed a little in refinement; and he remarks that it should impress the uninitiated to witness the ability of the demonstrator to diagnosticate with the fingers, through considerable fibrous tissue, hardly visible cysts yielding on puncture the tinest fraction of a drop. Halsted dwells also on the importance of determining the size of the involved breast relative to the other breast, and of noting most carefully the relative amount of uninvolved mammary gland remaining.

"Given a carcinoma, say, one half or one quarter as large as the palm of the hand, if this tumor has grown not at all, or little, at the expense of the breast, the prognosis is relatively good, for the tumor in such case is quite surely of a definitely adenomatous type and not of the scirrhous variety." Halsted holds that a scirrhous cancer represents only a part of what has existed, for the struggle against the cancer cells resulting in fibrous tissue production is not always futile, and when the minute foci of cancer epithelium have been destroyed, the new fibrous tissue may in part be absorbed also. As a result the scirrhous disease may be active, and metastasis take place a long time before the visible or palpable tumor is developed. We have seen how cancerous glands in the axilla may exist without obvious breast cancer, though later there developed a malignant tumor in the corresponding breast.

These remarks and reflections of Halsted demand the serious consideration of surgeons.

The subject of *prognosis* is probably the most important single element in this discussion, and we know how the histological character of the special tumor bears immediately on this subject; as Dennis says, the type of the cancer seems to have an influence on the prognosis greater than the now accepted radical operation. I have already referred to this matter in this writing, and incidently have pointed out the significance of glandular involvements as bearing upon the prognosis. Furthermore, Oliver states that the location of the primary growth is significant since "central growths and those located in the lower third of the base give a much larger percentage of recoveries than do growths located elsewhere." But there is no certainty in prognosis, even prognosis of evil, for, as Oliver states further, that matter in an individual case will always remain a doubtful question. "Seemingly favorable cases sometimes progress to a fatal termination, whereas one is sometimes pleasantly surprised by having an unpromising case go on to recovery."

Physicians are wont to ask us how much disability results from extensive mutilating operations on the breast. It is interesting to hear the unanimity with which the Washington debaters assert that the disability is slight. For instance, Greenough states that out of 53 patients interrogated 26, or about half, reported perfect use of the arm; 20 reported good use; 4 fair use, and 2 only "a little" use, while one described the arm as "stiff." That is to say, 50 patients out of 53 had serviceable arms after the subsidence of the initial shoulder lameness, which is so common. About one third of his cases had some swelling of the hand or arm, but this interfered little with the use of those members, and was transient in most of the cases. Ochsner bears similar testimony, stating that swelling of the arm was troublesome in but 10% of his cases. Jonas speaks of frequent swelling of the arm, but no permanent impairment of its use, while Oliver reports lymphedema of the arm in five of his 35 patients. Says Greenough, "It is probable the swelling of the upper arm is to be regarded as the direct result of the removal of the axillary lymph trunks; but swelling of the hands and fingers may probably be attributed to cicatricial pressure upon the vein. It is reassuring, however, to find that swelling of the arm occurs so commonly in cases without recurrence, and that it is not to be regarded necessarily as evidence of axillary recurrence."

Most of the speakers decline to accept an arbitrary time limit of three years as representing cure of the disease, and this feeling is expressed by Halsted, when he says that we should demand as proof of cure in those most difficult cases with involvement of the neck, that the patient live at least five years after the operation. Even in cases which suffer recurrence surgeons find that the recurrence often comes late. Oliver says that the average duration of life after operation (in fatal cases) is twenty months, according to his experience; the average time of recurrence being fourteen and one quarter months. Probably most surgeons will agree with Ochsner, who finds that about one half of the deaths occur within the first year. For instance, out of 43 eventually fatal cases, Ochsner reports 24 dead within a year, 30 dead within two years, and 36 dead within three years, the remaining 7 deaths being strung out over fourteen years. The statements of Oliver and Ochsner correspond quite closely with those of the other speakers, so that the surgeon should feel justified in strongly encouraging the patient who has survived the one-year limit.

The significance of the word *treatment* does not seem to appeal with entirely equal force to all operators, as one may gather from the quotations already given in this article. Greenough discourses upon four types of operations: *complete*, *semi-complete*, *incomplete* and *palliative*. By *complete* operation he means wide removal of the breast, both pectoral muscles, the axillary contents, and occasionally a dissection of the neck. We have seen that Halsted and Pilcher dissect the neck if there be cancerous deposits beyond the base of the axilla. All of the other speakers practically agree with Greenough in his definition of a complete operation. But it is needless to dwell further on this well-ventilated topic.

All surgeons appear to agree also in the proposition that wide areas of skin invariably should be removed; but one would be interested to watch their individual practice for, from the words of the speakers at the symposium, it is hard to believe that their conceptions of wide skin areas correspond. It seems that few surgeons remove so small an area of skin as to allow of direct suture of the wound. Halsted dissects out a great disk and covers in the raw surface with skin grafts, while others employ the plastic operations of Warren, Willy Meyer and Mixter. Greenough states that in his list of complete operations many of the wounds were *sutured directly*, with a resulting end success of 11.7%; while, in another large series of wounds closed by *plastic* flaps, 19.4% were successful. Halsted remarks that he should not care to say, "Beware of the man with the plastic operation," and endorses a statement that the operator whose duty it is to close the wound should not be intrusted with the planning of the skin incision. However, he does not regard the use of plastics as entirely taboo, but asserts positively that no surgeon should invariably plan his operation with a plastic in mind.

A careful reading of these papers impresses one with the fact that a great many surgeons interpret the words *complete operation* to correspond with their personal conception of the extent of disease in the individual case. Cabot says, "If the disease had infected many lymphatic glands it was sure to recur, even after a thorough removal of *all the muscles and axillary contents*." "In case 12 the nodule in the breast was small and so situated in the center of the gland that I felt safe in leaving the pectoral muscle. . . . Since that experience I have removed the muscles in all cases." Says Dennis, after vigorously endorsing the radical operation in suitable cases, "The element of time should be seriously considered, since the performance of any operation which requires the patient to be under an anesthetic for four or five hours is attended with a risk, which should, if possible, be obviated."

The veteran Vander Veer, commenting upon his own most favorable list of cases, remarks, "I would say that in the cases that are reached early I am not yet convinced that the very radical operation of removal of the pectoral muscles is called for, but we cannot be too emphatic in impressing on the younger men the necessity of careful examination and dissection of the axillary spaces."

Jonas sums up well the average practice of the best surgeons, when he states, that "no modern surgeon would have the temerity to stop short of a complete removal of the entire breast and axillary contents in the very early cases, and in later ones remove, in addition, both pectoral muscles and the fat from the supraclavicular

triangle"; while Jacobson has "employed the incision suggested by Dr. Halsted and has followed his technic, except as to the supraclavicular glands, in all cases. The latter step has only been undertaken when there has been apparent invasion of the neck. The axillary space has been thoroughly cleaned out, the pectoralis major and sometimes the pectoralis minor have been removed."

Contrast the foregoing statements and their associated evidence of good and improving end-results with the following brief profession of faith by Halsted: recognizing that extension, the most rapid, takes place "beneath the skin along the fascial planes, we must remove not only a larger amount of skin and a much larger area of subcutaneous fat and fascia, but also strip the sheaths from the upper portions of the rectus, the serratus magnus, the subscapularis and at times from parts of the latissimus dorsi and the teres major. Both pectoral muscles are, of course, removed.

"A part of the chest wall should, I believe, be excised in certain cases, the surgeon having in mind always that he is dealing with lymphatic and not blood metastasis, and that the slightest inattention to detail, or attempts to hasten convalescence by such plastic operations as are feasible only when a restricted amount of skin is removed, may sacrifice his patient.

"It must be our endeavor to trace more definitely the routes travelled in the metastases to bone, particularly to the humerus, for it is even possible in case of involvment of this bone that amputation of the shoulder joint, plus a proper removal of the soft parts, might eradicate the disease. So, too, it is conceivable that ultimately. . . amputation at the hip-joint may seem indicated."

In comparison with the splendid radicalism of Halsted all lesser operations pale, yet they are seriously to be considered if we regard published statistics only. Greenough reports 75 *semi-complete* operations, with an end-mortality of 75%, as contrasted with his end-mortality of 84% for *complete* operations. (By semi-complete he means his complete operation, done without disturbing the pectoralis minor.)

He reports 85 *incomplete* operations, with an end-mortality of 75%. (In the majority of these operations, which were done more than ten years ago, the pectoral muscles were not removed; in some the whole breast was not taken, and in others the dissection of the axilla was incomplete.)

Furthermore, Greenough reports 56 *palliative* operations, with an end-mortality of 93% only.

The reader will remember that Greenough's tables deal with cases running back thirteen years. We must not take courage too eagerly over the good results of his incomplete operations. Those patients of his may thank fortune that at the time of their operations the disease was still in its earliest stages.

Methods of treatment for cancer other than operative methods find a certain amount of qualified favor among surgeons. Most of the debaters have something to say about the x-rays, though none of them describe accurately their manner of using them. Cabot feels that occasionally the x-rays have checked and delayed the growth of inoperable cancer, but he does not feel that they are positively curative. Willy Meyer regards the x-rays as valuable in the immediate after-treatment, and urges every patient to submit to a six or eight weeks' course as soon as healing has been accomplished. He reports one case, for which he gave a bad prognosis at the time of the operation, but in this case faithful, intermittent use of the x-rays has had a most gratifying result. There has been no recurrence in four years. Of course, a single case of this kind is not convincing. Ochsner advises the use of x-rays systematically after all operations for breast cancer and believes that he sees their benefit. Jacobson also uses x-rays in the same fashion. On the other hand, Vander Veer has seen little permanent good result from the use of the x-rays, except that undoubtedly in many cases they relieve pain, and sometimes delay the activity of the growth. In this connection one recalls Crile's enthusiastic endorsement of x-ray treatment after the removal of cancer of the neck. His method is to leave the wound wide open and to project the rays directly into its granulating depths, employing the treatment every other day for several weeks, and so vigorously as to keep up a mild dermatitis in the vicinity of the wound. We encounter an interesting paradox when we contrast these facts with the experience of those well-known x-ray workers, who have contracted malignant skin disease from long continued exposures to the rays.

Halsted again reminds us of the occasional value of caustics in the treatment of cancer, and points out that regional recurrences after incomplete operations may be delayed by the use of chemical or actual cauterization. Caustics seem to check cancer permeation of the surrounding tissues, and Halsted states that all incomplete operations for cancer should, when possible, be made with the Paquelin or actual cautery. Other surgeons, notably the Mayos, endorse this view and practice.

If one may epitomize the combined teachings regarding treatment, of the Washington speakers one may say that cancer of the breast should be removed with a great skin margin; with a wide dissection of adjacent fat and subcutaneous tissue; with excision of both pectoral muscles; occasionally with stripping the fascia from the numerous neighboring muscles; with thorough cleaning out of the axilla, and when the axilla is involved beyond its base, with dissection of the neck as far as the bifurcation of the carotid. Palliative operations should be performed if possible with the Paquelin cautery, and in all cases the wounds should be treated subsequently with the x-rays for at least six weeks.

In conclusion, so numerous are the figures and so prolific the writers and speakers that one could pile up great numbers of familiar or curious facts, but the main points of the story have been

brought out, and we may sum up the discussion in somewhat the following fashion:

The speakers in Washington dealt with 1,194 cases, and an end-mortality of 56.63%, including all varieties of subjects, all varieties of breast cancer, patients of various ages and growths of various development. The case surviving longest *without* recurrence is a patient of Dennis. Twenty-nine years have passed since her operation. The patient surviving longest *with* recurrence was attacked secondarily in the twenty-second year after her operation.

Of the 1,194 cases reported, 518 are now alive and in good health, after more than three years have passed since their operations.

Operations varying greatly in extent and severity were done by these speakers — operations varying from palliative to extensive mutilating dissections.

Handley's explanation of the permeation of cancer meets best our understanding of the conditions of spread, metastasis and recurrence of the disease.

Extensive axillary involvement implies supraclavicular involvement, and calls for extensive dissection in a great number of cases. Cancerous glands in the neck do not point necessarily to a hopeless condition.

Palliative operations should be executed with a Paquelin cautery so far as possible.

Recurrence in the scar is becoming less common as we appreciate increasingly the importance of removing wide disks of skin. Internal metastasis is most common in the lungs, mediastinum, liver, spine, brain, humerus and, occasionally, the femur.

Even pessimists will admit that these results, representing the work of widely scattered groups of surgeons, show a great advance over what we knew when this generation was ten years younger.

Reports of Societies.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

MEETING HELD AT THE MASSACHUSETTS CHARITABLE EYE AND EAR INFIRMARY, JAN. 18, 1907.

THE President, DR. A. COOLIDGE, JR., in the chair.

DR. E. A. CROCKETT read a paper on

TWO CASES OF HEMORRHAGE FOLLOWING TONSILLOTOMY.[1]

DISCUSSION.

DR. F. P. SPRAGUE, of Providence, read a report of some secondary cases.

One patient was operated on under ether, the ridge, the adenoids and both tonsils were removed. Everything went well until the fifth day. On the fifth day after the operation, in the night, as usual, they telephoned for me to come to the house as the patient was having a severe hemorrhage from the right tonsil. I went and in an hour or two I was able to check the bleeding. In two days there was another hemorrhage, which was more easily stopped than the first.

These are the only cases of secondary hemorrhage that I have ever had, and naturally, every time I see an adult tonsil to be removed, I have a fear of the fifth day. If I can get over the fifth day, I feel quite safe.

In this case, the reason it took so long to stop the bleeding was because every time the patient swallowed the clot was torn away from the surface and the bleeding immediately followed.

As regards antisepsis of the throat, I had this throat sprayed every two or three hours, from the time of the operation until after the hemorrhage, with Dobell's solution. Although this throat seemed perfectly clean, of course there must have been some infection. Certainly, I think some precautions are necessary.

If a person comes to me with hypertrophied tonsils and adenoids, and looks like a thin-blooded individual, I try to have that patient better nourished and do what I can to improve the quality of the blood before anything is done in the way of an operation. After the operation, I take the precaution to paint the throat thoroughly with glyceride of tannin, and it seems to me that this has been a help.

In some cases, if there is very much bleeding at the time of the operation, I use cracked ice and hold it in the body of the tonsil for a few moments after the operation. Following the operation, for the first day, I do not allow the patients to have anything even warm; I keep them on cold milk and ice cream and cracked ice.

Ice cream is always grateful to the children, almost everybody likes it, and it certainly has a beneficial effect in keeping the blood vessels contracted. In grown people, I do not allow the patients to have hard crusty things, nor hot foods, for three or four days following the operation. It seems to me that is some help in the preventing of hemorrhage.

I do not see how much better off we are in taking out a piece of the tonsil, to see whether it is going to bleed or not. In this case that I reported, the woman was twenty-seven years old at the first operation, and thirty-six at the next, but the tonsils were as soft as we usually find in a child of a dozen or fifteen years of age. If a patient comes to me, and I get a history of repeated attacks of quinsy sore throat, I leave that tonsil alone because I think we stand a pretty good chance of getting into trouble by cutting such a tonsil.

After we get the hemorrhage, various methods are used. I have a clamp I carry in my bag all the time. I hope that I shall never have to use it.

I had one case where there was a hemorrhage from the anterior pillar, where the anterior pillar became engaged in the tonsillotome, and although it only chipped off an eighth of an inch, it bled quite profusely for some time. The patient was twenty-eight years old.

DR. J. P. CLARK: I have been very much interested in the reports of these cases of Dr. Crockett's and Dr. Sprague's, and it seems to me rather strange that removing the tonsils as thoroughly as we do nowadays, that we do not hear more of hemorrhage. I want to take this opportunity of reporting the only case I have had of secondary hemorrhage in a child. This occurred last spring, in a little girl of seven years of age, from whom I removed adenoids and tonsils. There was nothing remarkable about the operation, except that I made a note that the right tonsil was larger than the left, and that in removing the left, the hemorrhage was rather freer than usual. I heard from her every day, and on the fourth day about two o'clock, I received a telephone message from the parents saying that, about the middle of the night before, the child had waked up very much terrified, and had vomited up a large quantity of bright red blood, and had been spitting up blood ever since, and asked if they should bring her in to see me. Of course, I was very much surprised that they

[1] See page 661.

had not notified me before, and I said I would come out at once. The father came for me in his automobile, and thus I got to the house within a very short time after being notified.

I found the little girl with a bowl in her hands, spitting up blood. She was lying in bed, pulse 140, very nervous, and would not let me look at her mouth at all, but I got a sufficiently good view to see that the blood was coming from the left tonsil.

There seemed to be nothing to do but etherize her. I sent for Dr. D. Crosby Greene, Jr., to assist me, and for the family physician to give the ether. I found, on examination, that the blood was oozing quite freely through the remains of the tonsil. With a curved needle and catgut, I took two stitches through the posterior pillar, under the base of the tonsil and out through the anterior pillar, bringing the pillars together over the bleeding tonsil; after tying the sutures the bleeding stopped completely. During the operation, the child vomited about a pint of bloody fluid. She was put to bed. The pulse was then about 200, as nearly as could be counted. During the following night she was given two or three enemata of salt solution. She was kept in bed for ten days, and made an uneventful recovery.

The instruments used to remove the left tonsil had been a tonsillotome and a tonsil punch. While the sutures were in the throat, the voice was somewhat nasal, as their presence interfered with the motion of the soft palate.

Dr. Kittredge: Is there any special needle holder that you use?

Dr. Clark: I used an ordinary needle holder in this case.

Dr. T. A. DeBlois: I dare say Dr. Farlow recalls the celebrated case of Dr. Lefferts, of New York, who had to take up an artery and tie it in the mouth. He was able to locate it, pick it up with the forceps and tie it.

I had a case, myself, which drove me away from tonsillotomy for several years. I cut off both tonsils, and the woman bled for an hour and a half, and finally, when she fainted and rolled off the sofa, why then, she stopped bleeding.

In the labors of the medical inspectors in the public schools, where the children are sent to the hospitals by scores, for the extirpation of the tonsils and adenoids, one half of the patients will have tonsils to be removed together with the adenoids. We have been doing this for several years, and we have, to the best of my belief, had no trouble with hemorrhage with tonsillotomy, whether with the Leland knife or guillotine. Our procedure is always the same, adenoid, tonsil or anything else; we always scratch with the sharpened finger nail after cutting. It is a good thing in adenoids to clean out the little fossa of Rosenmueller with the finger nail, and it certainly tends to arrest hemorrhage, just as it does in obstetric cases. We follow that procedure with the tonsil cut off with the tonsillotome; we scratch and they bleed very little, and I suppose we have been doing this in these large institutions, 20 to 30 a day, for about five years, and I think that Dr. Vogel will agree with me, that we have never had a case of severe hemorrhage at the hospital.

Dr. F. L. Jack: I have seen only one case of alarming hemorrhage after removal of the tonsils. I did not operate myself, but was called in on account of the bleeding. The operator had removed a small portion of the anterior pillar, which contained a good sized artery. The child was etherized, and the artery seized with a pair of long forceps. I have seen a moderate hemorrhage at the time of operation, but never a case of delayed bleeding.

The causes of hemorrhage are apparent, but no one has enlarged upon the best method of arresting it. Unless the patient is etherized one cannot keep him still or open the mouth to see anything. Therefore, it would seem as though ether were necessary. Sewing the pillars together is a very difficult thing to accomplish.

I always carry with me a large hemostat, one blade of which exerts pressure on the tonsil and the other on the neck. The handles are removed, and the instrument left in the mouth.

Dr. W. S. Boardman: A patient came to the Boston Dispensary from Lawrence. It seemed advisable to remove his tonsils and I took off one with a snare, when an artery spurted and became very troublesome. The fellow kept his mouth open, while I wiped off the surface, found the spot and applied a hemostat. He went to the City Hospital over night, and came back to the dispensary in the morning, but did not care to have the other tonsil excised.

I do not know how long they kept the hemostat in his mouth. It seems to me that we should find out whether the hemorrhage is from an oozing surface or an artery, and consider whether a hemostat or the clamp, Dr. Jack spoke of, can be better applied. A bit of cotton or gauze wet with a solution of gelatin and applied to bleeding tissue acts well, and I have often found that gelatin, locally applied, helps to clot blood in a short time. I think the old remedy of applying compresses wet with compound tincture of benzoin, can be tried in some cases of hemorrhage from the nose, with success, but would not expect so much to result from its use in the case of excessive and obstinate hemorrhage, following removal of tonsils.

Dr. E. M. Holmes, of Boston: About two years ago I had a case, a girl twenty-one years old, from whom I removed a large tonsil. The operation was in the morning, and four and a half days after, there was this profuse hemorrhage. In this case, I used the curved needle and catgut suture, and instead of making two, I made five or six stitches about the pillars, forming a purse-string, drawing the tissues together in that way.

I used a Monks needle holder; it was not the easiest thing to do, but we had to do something, and this was entirely successful.

Dr. G. H. Powers, Jr.: Dr. Crockett told me over the telephone which side had bled at the time of operation, and I assumed that it would be that side when I arrived. I put on all the digital pressure I could bring to bear, until we could get a clamp there, from four to five minutes. After the hemorrhage had stopped, that clamp staid on until the next morning, eighteen or twenty hours, with, of course, great discomfort to the patient, but with no recurrence of the hemorrhage.

The patient was so exsanguinated that extreme measures were necessary — saline infusions, etc., after which he rallied very satisfactorily.

Dr. A. C. Getchell, of Worcester: I have had experience enough with bleeding to make me look upon every case with more or less anxiety, and watch the telephone carefully for two or three hours after an operation.

Dr. Jack has raised the question, What should we do?

My general plan, in the first place, is not to operate unless my patients can go immediately to bed, and stay there for a number of hours; in the second place, if there is bleeding, to keep them as quiet as possible with the head and shoulders elevated. I apply cold, in the form of ice, to the outside, and I think it is practical to get a good view of the area. If there is oozing, I think that peroxide of hydrogen, up to the full strength, is well worth using, locally, and if the pulse becomes rapid and weak I give a salt injection by the rectum. Of

course, if the bleeding is extreme, as it has been in one of my cases, I inject salt solution into the veins. The last resort of applying constant pressure or sewing together the half arches, I have fortunately never had to resort to. I carry with me a Douglass needle, which seems to meet the indications.

DR. F. P. EMERSON: It seems that the gist of all the remarks that have been made tends to show that this operation of tonsillotomy, even in the hands of the most skilful, is apt to be followed by serious hemorrhage. In these days when the general practitioner, as well as the specialist, is doing this operation, we ought to send out this warning. This is a surgical procedure which should be entered upon with every precaution, and these cases should be where they can be watched for twenty-four hours, especially in adults. There is no other field in surgery where we leave such a raw surface to practically take care of itself as in the adenoid and tonsil operation. In most cases, the hemorrhage comes on two hours after the physician has left the house.

As we are doing a more thorough and radical operation on adenoids and tonsils than formerly, it seems as though these cases should be put in a position where they can be watched, carefully looked after and treated surgically.

DR. HARRY BUTLER, of Bangor: I would like to report one case of primary hemorrhage at the operation. It was a little girl, fourteen years old. I used cocaine because she could be controlled more easily. I somewhat expected to get hemorrhage. One tonsil was rather a small one, and the other an extremely large one.

The history of the case was, that her family physician had for the past year been attempting to shrink the tonsils by various methods of treatment, preparations of nitrate of silver, galvanopuncture, etc. I made up my mind that the tonsil tissue was so hardened, and the walls of the blood vessels were so hardened, that they would not contract, so I removed the smaller tonsil first.

Then in the course of five or six days I removed the large one with a tonsillotome, and, as expected, got the hemorrhage. I removed it at about ten o'clock in the morning, and I tried all kinds of methods for the control of hemorrhage without result, finally controlling it by pressure with my fingers. I held my fingers, one on the inside and one on the outside, for about twenty to twenty-five minutes, then removed them and kept her very quiet in the office until about five o'clock in the afternoon; after which I accompanied her home and saw her safely placed in bed, and had no further trouble.

In this case, I think that the previous treatment was responsible for the excessive hemorrhage, and I think, as Dr. Farlow says, it pays us to try to determine beforehand what the prospect is for a hemorrhage.

I think that the act of vomiting is one of the methods which is very good in the control of hemorrhage, and I think in one of Dr. Crockett's cases possibly the stopping of that hemorrhage was due to the vomiting.

I always note the character of the blood at the time of the operation. In nearly every operation for adenoids or a tonsillotomy, while the child is being held forward, I notice the character of the blood, as it drops upon the white sheet. If it is watery, or light colored blood, I should naturally expect a little more hemorrhage, and one harder to control than if it is dark, thick blood.

DR. BOARDMAN: The point is brought up that, in operating, some tonsils are very apt to bleed excessively, while others do not, and are a lesser cause of anxiety. Suppose that you feared a hemorrhage, and it was necessary to operate, what would you do as a prophylaxis? It has been stated, and I believe I have proved, that the extract of the thyroid gland assists in helping the blood to clot, which is also true of chloride of calcium, so it does seem to me that we can prepare a patient shortly before an operation, and proceed to remove the tonsils in all safety.

DR. E. E. FOSTER, of New Bedford: There was an article recently in one of the German magazines, which reported a number of cases, and in all these cases (they were brought into this hospital where the writer was a surgeon) showed bleeding in the posterior pillar, and his theory was that these secondary hemorrhages were due to the action in swallowing. That is, the clot was torn away from the artery which, in many cases was quite good size, and in all these cases digital pressure was suffieient.

I had a patient which I operated on, two years ago, for chronic laryngitis, a man fifty years of age, treated for a year or two without success, but the only thing I could find was extremely large tonsils. I expected difficulty in removing them, but I was able to get a wire in back of his tonsils and hold it very easily. On the left side, however, there was a spurting artery, which at each heart beat would force a stream of blood across the throat; I was able to take it up and control it perfectly well, without any secondary hemorrhage whatever.

DR. A. COOLIDGE, JR.: I have read the article to which Dr. Foster refers. The number of cases reported was rather small, something like six to ten perhaps, and although all of those cases stopped by lateral compression in twenty minutes, still it seems to me that, under many circumstances, you would feel a great deal safer, if you could have a clamp on that tonsil which was in place and which was going to stay there for twelve hours.

DR. CROCKETT: It has always been my routine practice, in doing tonsils, to dissect off adherent ones with a Leland knife, and with the nonadherent put on an ecraseur forcep and make traction until I approach the pillar. In using the ecraseur, I just draw the tonsil out as far as I can easily, and then take a twist on the tonsil. I have always done that, and with many tonsils have had no trouble. I have always felt it safer to do that than to cut around the tonsil with a No. 5 wire.

I used the clamp on the first case about two o'clock in in the afternoon, and kept it on until ten o'clock at night; he was nearer dead than any one I have ever seen, and made no objection to anything; he was completely unconscious. I judged in this case, as well as the second, that it was impossible to tell which part of the tonsil was bleeding; the bleeding was so tremendous that it filled the throat, and it was quite impossible to tell where it came from, until the case was exsanguinated.

CARCINOMA OF THE AURICLE.

DR. F. L. JACK: I wish to show you the results in one or more cases of the radical operation, and one of amputation of the auricle for carcinoma.

The patient with the carcinoma is a man sixty years old. The growth was of two years' duration, and located on the upper part of the ear extending into the meatus a quarter of an inch. He was told the nature of the growth, and the only one thing to do, and he readily consented to amputation of the auricle. The entire auricle, with the exception of the lobe which was free from the growth, was removed. The lobe was then cut in halves, and the tissues removed close to the skin, and then this flap was carried above, and with a little adjusting the entire denuded surface was covered and the cartilaginous meatus stitched to this flap. Mattress sutures were successfully used. At the time

of leaving the Infirmary, the wound was entirely healed.

One other case, unique in my experience, of

FATAL HEMORRHAGE FROM CHRONIC SUPPURATIVE MIDDLE EAR DISEASE.

The patient was a small child who, a few hours after entering the Infirmary, had a sudden hemorrhage from the nose, throat and ear. It was so excessive that by the time the house officer arrived, the patient was dead. An autopsy was made by Dr. Verhoeff, who saved the temporal bone for a more careful examination, to determine the bleeding point. He feels quite sure that the hemorrhage occurred from the jugular vein. Hemorrhage following middle ear suppuration is unique in the history of this institution, and I can recall few reported cases.

EIGHTH ANNUAL MEETING OF THE AMERICAN THERAPEUTIC SOCIETY.

HELD AT WASHINGTON, D. C., MAY 4, 6 AND 7, 1907.

(Concluded from No. 19, p. 643.)

PHYSIOLOGICAL ACTION, ELIMINATION, AND THERAPEUTIC APPLICATION OF SODIUM CACODYLATE USED HYPODERMICALLY.

DR. SPENCER L. DAWES and DR. HOLMES C. JACKSON, Albany: Sodium cacodylate was introduced by Gautier, in 1899. During the next four years it was hailed as a desirable substitute for arsenic. In 1903, however, Fraser gave it its *coup de grâce*, for with one or two exceptions all English and American text-books deny the possibility of its having either physiological effects or therapeutic value when given hypodermically. The studies of Dawes and Jackson show that the drug has a distinct pharmacological action (being decomposed and eliminated as arsenates in the urine, feces and probably the sweat and breath), and has a toxic effect; the urine of the patients yields arsenates and reacts to Marsh's test. It also gives many of the therapeutic effects common to arsenic compounds. The authors set forth the experiments used to sustain this contention. Cases are also cited illustrating its therapeutic value. These include lichen ruber, psoriasis, eczema, anemia, Hodgkin's disease, chorea, gastralgia and neuroses. Of 45 cases reported, 34 were either entirely cured or much benefited; 11 were not helped, and 2 were apparently made worse.

DISCUSSION.

DR. H. VAN RENSSELAER, Albany, commended the paper as being thoroughly scientific. He was inclined to take a middle ground as to the value of the remedy. The advantages are that it can be used when arsenic cannot be given; in hysteria and nervous affections the hypodermic method in itself makes a distinct mental impression; the patient must come frequently for treatment and is thus kept under observation. Disadvantages are that the drug is expensive, and the patient must expend considerable time in coming for treatment. He thought it wise to try ordinary arsenic first, and if that fails fall back upon sodium cacodylate.

DR. DAWES, in closing, described the method of injection. It is injected intramuscularly in the buttock. A sense of exhilaration follows. There are few complaints of pain.

A RESUME OF THE PHYSIOLOGY OF THE KIDNEY WITH A VIEW TO THERAPEUTICS.

DR. V. E. HENDERSON, Toronto: Dr. Henderson concludes that Brown-Séquard's contention that the kidney has an internal secretion has lost rather than gained weight. The cells of the tubules undoubtedly excrete urates, hippurates, pigments, and possibly creatinin. They are permeable, and in man may excrete water, chlorides, phosphates, sulphates under stimulus, and under more abnormal circumstances dextrose. The urine leaving the tubules, though usually more concentrated than the plasma in salts and urea, under a rapid flow more nearly approximates it in salt composition, and may even become more dilute than the plasma. Filtration does not occur; it is rather a diffusion under pressure. He suggests that the term secretion as applied to the kidney be dropped. A theory may be advanced in the future based on the following facts: between the membrane and the substance passing through it some chemical affinity must exist; for instance, a membrane may exist such that water and salt may pass through it but not such a crystalloid as sugar; when the affinity is slight, in case of a dilute solution, though none of the dissolved substance may pass through, yet with a higher pressure it may do so; the osmotic pressure does not vary with the substance present or with the temperature; different membranes may allow different crystalloids to pass through but not the same crystalloids.

DISCUSSION.

DR. OLIVER T. OSBORNE, New Haven, commended the paper. A number of years ago we dropped the term "Bright's disease" and now speak of renal sufficiency or insufficiency. We cannot determine the pathological condition of the kidney by chemical means; patients do not necessarily die of kidney disease when albumin is present in the urine, and yet they may do so when none is present. We should make a more careful examination as to salt excretion in order to determine if possible what portion of the kidney is diseased. As to whether the kidney has an internal secretion, the affirmative position must be disproved. It is possible that the kidney forms an antitoxin. This is indicated by the fact that in nonfunctional disease suppression has existed as long as four days without uremic symptoms, whereas they almost invariably occur in organic disease within twenty-four or thirty-six hours.

DR. SOLOMON SOLIS-COHEN, Philadelphia, said that he must differ with Dr. Osborne. In a case in his early practice suppression existed for seventy-two hours without any other symptom than dilatation of the pupil. Dr. Osler confirmed the diagnosis of contracted kidney. The patient died twenty years later of pulmonary tuberculosis.

DR. WILLIAM H. PORTER, New York, spoke of the vicarious action of the kidneys and liver.

THE THERAPEUTICS OF BRIGHT'S DISEASE BASED UPON ITS ETIOLOGY.

DR. WILLIAM H. PORTER, New York: Dr. Porter draws the following conclusions: 1. All therapeutics to be successful must have for the primary object the removal of the causative factors of disease. 2. Hemorrhagic nephritis as such does not exist. It is an occasional modification of the chronic parenchymatous change. 3. Most renal lesions are non-inflammatory processes. The one exception is the exudative class. Most renal lesions are due to overwork of the glands at a time when nutrition is impaired. 4. Both the overuse and defective supply of the starches, sugars and fats are important factors in the production, maintenance and cure of renal lesions. 5. Nervous overstrain is also an important factor. 6. Treatment is to be directed both to prevent and cure. 7. It consists chiefly in the removal of causative factors. 8. It calls for a thorough knowledge of chemico-pathology

and dietetics. 9. Drugs, while not curative, may indirectly produce wonderful results. 10. These renal lesions, when studied from the histological standard only, are incurable. Considered from the physiological and chemical standpoint a large per cent are curable. 11. It is difficult to see how surgery can be made to remove the underlying factors. Hence such means cannot be classed as scientific.

INDICATIONS FOR THE RADICAL MASTOID OPERATION AND ITS RESULTS.

DR. W. SOHIER BRYANT, New York: The indications may be placed in two categories: 1. Those cases of acute mastoid involvement with extensive infection or destruction of the temporal bone, requiring the complete evacuation of all the cellular structures connected with the middle ear and mastoid. 2. Certain cases of chronic suppuration of the middle ear. The results are three: cessation of suppuration, complete lack of external deformity, and greatly improved hearing. After citing cases in illustration, Dr. Bryant concludes as follows: 1. The radical mastoid operation assures cessation of the purulent otitis. 2. It is an operation for the immediate relief of this condition. 3. It may be the operation of final recourse. 4. The hearing is much improved since in a number of cases the auditory function of the middle ear can be almost completely restored. In a small number of cases there is no improvement in hearing. 5. The cosmetic results are very satisfactory. 6. Paralysis of the facial nerve is a very rare accident in skillful hands. 7. The results are uniformly satisfactory when the best technic is employed.

DISCUSSION.

DR. T. E. SATTERTHWAITE, New York, said that in his experience the almost uniform result was that hearing was not improved.

DR. W. H. PORTER, New York, endorsed this statement. It is a question whether it is not better to proceed more slowly than to risk the total loss of hearing through operation.

DR. FREDERICK H. GERRISH, Portland, Me., spoke of sinus thrombosis in connection with disease of the ear. A radical operation is necessary to save the patient's life. He cited the case of a child twelve years old, seen two years ago. The temperature rose to 108°. He performed a radical operation, removing the clots, and the child recovered. The general practitioner should remember the possibility of this complication as a result of extension of infection.

DR. SOLOMON SOLIS-COHEN, Philadelphia: Most of the cases he had seen were in children. The patients are in much danger, and we take a great responsibility in advising delay. Hearing is a secondary matter. In a number of instances he had known meningitis, brain abscess and other serious complications to follow neglected mastoid disease. It is worse than appendicitis so far as danger is concerned. He always advises immediate consultation with a skilled aurist. He cited a case illustrating the danger of delay.

THE NONSURGICAL TREATMENT OF EXOPHTHALMIC GOITER.

DR. SOLOMON SOLIS-COHEN, Philadelphia: Dr. Solis-Cohen had recently heard a paper on the surgical treatment in which a mortality of 30% to 50% was considered a good result; 10% was considered phenomenal. He would be ashamed of a mortality of 10% from medical treatment. He related 3 cases in which he used the new serum treatment. 1. Patient almost moribund: surgeon refused even to give anesthetic. Beebe's serum given after a few days, all else having failed. Dyspnea had been a marked symptom. Ten minutes after injection the dyspnea was less and the patient was more comfortable. After a few weeks she was sent home better in every way. She remained in bed and continued serum treatment for four or five weeks, until it was no longer necessary. After a few weeks the symptoms returned, and she was as bad as before. Under the serum treatment she improved and was apparently well for two months, when another relapse occurred. At last report she was improving under treatment. 2. A drunkard. Classical symptoms present. Improved much under the serum. Relapsed and improved again, and was discharged a few days ago, the symptoms having disappeared. 3. In this case the serum gave no results good or bad after four weeks' use. In early cases it is not necessary to use the serum. Ordinarily the old treatment is efficient, rest, hygienic measures, and drugs,—ergot, picrotoxin, strophanthus, and thymus and adrenal gland. He tries adrenal first. Generally it proves efficient. It not, he gives thymus, and if necessary, both together. These failing, he goes back to ergot and picrotoxin.

DISCUSSION.

DR. PHILIP KING BROWN, San Francisco, asked why relapses are so apt to occur after the serum treatment. They are not characteristic of the disease. His results from medical treatment were about the same as Dr. Solis-Cohen's. X-rays are very efficient in reducing the size of the gland; Mayo uses them for this purpose before operating; they also reduce the pulse rate. The results from operation in his country, so far as mortality is concerned, were good. He knew of but one death, and that was caused by cutting through the gland and liberating too much secretion in the system.

DR. LOUIS KOLIPINSKI, Washington, asked whether exophthalmic goiter is strictly a surgical disease. What are the indications for operation?

DR. T. E. SATTERTHWAITE, New York, asked as to the nature of the serum.

DR. SOLIS-COHEN, in reply, described Beebe's serum. He could not answer Dr. Brown's question as to why the relapses occur. One must give the patients time to recover. The disease is of slow development and slow retrogression. Many failures are due to impatience and lack of confidence in the method employed. The indications for operation are: 1. Failure of timely diagnosis by the medical attendant. 2. Improper or inefficient medical treatment, and threatening death. With a timely diagnosis and proper medical treatment there is no need of surgical interference.

THE IMPORTANCE OF EARLY RECOGNITION OF NASAL OBSTRUCTION WITH RELATION TO DISEASE IN OTHER REGIONS.

DR. CHARLES H. KNIGHT, New York: Read by title.

THE TREATMENT OF CHRONIC VALVULAR DISEASE OF THE HEART.

DR. THOMAS E. SATTERTHWAITE, New York: The paper first deals with treatment by baths and exercises, particularly the Nauheim method. Its value is now generally recognized. The Oertel method is helpful in mild cases. The Nauheim system is adapted to a much larger class of cases, and even when a complete course of baths and exercises is contra-indicated it can generally be used to advantage. The particular muscles to be exercised, the duration of each movement, and the interval between them depend upon the views of the physician. It is well for the physician to be present at the treatment in person. The Nauheim

method does good by driving the blood into the capillaries, thus relieving the heart and lowering arterial pressure; the improved condition of the circulation promotes metabolism and nutrition; the skin becomes softer and the urine increases in quantity and specific gravity, showing that the system is more rapidly getting rid of waste products. The method is applicable to any form of heart weakness or valvular disease, whether due to loss of compensation or not, especially where there is high arterial tension, dilatation and muscular degeneration, provided the muscular relaxation has not gone too far. After discussing massage and baths, the writer turns to treatment by drugs. Strophanthus is becoming better known, and is producing better results. It acts quicker than digitalis and slower than the nitrites. Suprarenal capsule is being used more and more; it is probably the most powerful heart stimulant we have, contracting both the heart and arterioles. He has found no ill effects from as much as one fiftieth grain of nitroglycerin every five minutes in alarming cases. The dose should be increased cautiously in arteriosclerosis. Camphor acts in a few minutes and is a perfectly safe stimulant. Convallaria has had its day; it is unreliable. Sparteine has come into favor. Caffeine is a mild but rapid stimulant. Digitalis is the most effective remedy in cardiac weakness.

DISCUSSION.

Dr. F. E. Stewart, East Orange, said that the varying effects of adrenalin may in part be ascribed to the difference in strength in the preparations employed. Unquestionably some of the tinctures deteriorate on standing; this subject is being investigated in New York, and it is possible that in the future labels may be dated, indicating the age of the preparation. He had used the baths in uric acid diathesis to good advantage.

Dr. Eli H. Long, Buffalo, said that the keynote in treatment is heart nutrition. He highly commended the Schott baths. They rest the heart by lessening peripheral resistance, and thus promote metabolism and nutrition. Even when there is lack of compensation and the case is hopeless as to cure the baths rest the heart and prolong life.

Dr. Arthur H. Hall, Washington, asked how often the baths are given.

Dr. Beaumont Small, Ottawa, said that the acute and chronic forms of heart disease require different methods of treatment. The chronic forms are particularly troublesome. He asked Dr. Satterthwaite how soon after acute onset he ordered the baths. He thought it well to allow a period of rest before beginning the exercises. The chief value of the baths is in the temperature although the saline and other ingredients may have some small value. The patients are best treated at institutions, where there are adequate facilities and trained assistants. The main point is the relief of the peripheral circulation when it is congested. He commended camphor as a stimulant. The tincture is the most trustworthy of the preparations of digitalis.

Dr. Oliver T. Osborne, New Haven, agreed that institutions are the best places for these patients. The *régime* and willingness of the patients are strong factors. Digitalis is a heart tonic rather than a stimulant; it is an error to give it in acute cardiac failure, or at frequent intervals. Thus it may do harm in typhoid, pneumonia, and other acute conditions. There is much poor digitalis on the market. Strophanthus deteriorates rapidly; it should not be diluted with water. He commended nitroglycerin. Adrenalin is being a little overworked; it is not well in these cases to increase the tone of the arterioles too much. It should be remembered that the heart is only a small part of the circulatory system.

Dr. John Madison Taylor, Philadelphia, spoke of the influence which can be exerted upon the circulation through vaso-motor control by means of gymnastic exercises. The importance of these mechanical measures is often overlooked by those who deal with heart affections. There is prevalent a woeful lack of knowledge as to the vaso-motor system. He had hoped that Dr. Satterthwaite would say more as to the value of mechanical measures.

Dr. Spencer L. Dawes, Albany, added his testimony as to the value of strophanthus and its glucoside. It is almost a heresy to speak against digitalis, but there are cases with adequate compensation when it is not applicable. The preparations of adrenalin change on exposure notwithstanding the claims of manufacturers to the contrary. He emphasized the value of chloralamid as a hypnotic in heart affections. It is particularly useful in cardiac asthma.

Dr. Louis Kolipinski, Washington, inquired as to the comparative value of the Nauheim and drug treatments.

Dr. Howard Van Rensselaer, Albany, expressed the belief that the salts in the waters of the baths have no efficacy. It has been proved that salts in aqueous solution are not absorbed by the skin. Shipwrecked sailors soon become insane if they drink salt water, but if they throw over an arm or leg a cloth wet with sea water their thirst is in a measure assuaged: the water is absorbed but the salts are not. The same thing has been scientifically proved by experiments with potassium iodide and lithium. The good done by the baths is mainly due to the water pressure and temperature.

Dr. Robert Reyburn, Washington, said that his experience with the baths had been unfavorable. He had seen no therapeutic effect of long duration. What benefit there is results from friction and temperature.

Dr. Satterthwaite, in closing, agreed with Dr. Osborne that the patients can best be treated at an institution. They cannot be properly controlled at home. We must distinguish between acute and chronic heart affections. The Nauheim method is applicable only to the chronic forms. Mild cases of arteriosclerosis are suitable for treatment, but when there is danger of apoplexy the treatment is dangerous. The baths are given for ten minutes or less every other day, their number depending on whether the patient stays four or six weeks. The temperature is undoubtedly an important factor. Pulmonary gymnastics form a valuable auxiliary to treatment.

RESTORATION OF TISSUE TONUS IN THE ABDOMINAL SUPPORTS.

Dr. John Madison Taylor, Philadelphia: Between the diaphragm and pelvis the body is anatomically and physiologically weak. There is a tendency to inefficiency of the natural abdominal supports, and this tendency is accentuated by weakness of the abdominal muscles from disuse. This inefficiency is greater in some individuals than in others, and it often reaches a point where the abdominal viscera are not properly supported. When the supports are adequate there is a relatively slim waist in man and woman alike. When they are inadequate there is a dropped chest and protruding abdomen, and the lower organs are in a state of hyperemia with insufficient drainage; there is a tendency to ptosis and functional incompetence. Ordinary exercises do not reach this part of the body. The Nauheim treatment does good, but it is not sufficient. After a study of thirty years he had come to place reliance on certain exercises which are directed solely to

the strengthening of the abdominal supports. He employs artificial supports, belts, etc., until the natural supports have to some degree recovered their tone. Viscero-ptosia is a serious condition and one that is not to be remedied by the surgeon. His methods had enabled him to restore displaced viscera with marked local and systemic benefit. Time is necessary for a cure. After months, or even years, surprisingly satisfactory results can be obtained. He gave an illustration of the method employed.

A STUDY OF THE MODERN DRUG BUSINESS IN ITS RELATION TO MEDICAL PRACTICE.

DR. F. E. STEWART, East Orange: Dr. Stewart emphasizes the following points: 1. Medicine and pharmacy cannot be practiced as disassociated and independent professions as they are mutually dependent. 2. The practice of pharmacy should be carried on as a subordinate profession to medicine, and the pharmacists should be subjected to the same professional censorship as physicians by membership in societies that are in affiliation with medical societies. 3. The proper practice of the pharmacologic art requires a free materia medica and common standards, jointly established and maintained by the medical and pharmaceutical professions, and the manufacturing houses engaged in the materia medica supply business. 4. The practice of pharmacy and drug therapeutics should be limited to qualified and licensed practitioners, and the field of practice should be protected from invasion by unlicensed practitioners who set up as manufacturers and conduct their business in unfair competition. 5. Inventors of new and useful processes and apparatus for the manufacture of materia medica products, who are duly qualified by education, training and license, and who are members of regularly constituted professional societies in good standing, should be rewarded for their inventions and discoveries by patent protection.

DISCUSSION.

DR. H. C. WOOD, Philadelphia, did not believe that the science of pharmacology would be advanced by giving it over into the hands of the manufacturers. Their chemists have introduced a few useful drugs, but they are so few that the good they have done is a negligible factor compared with the harm they have wrought. The world would be better off to-day had the coal-tar drugs never been discovered. All of the useful ones can be counted on the fingers of one hand. Antipyrin has justly achieved a place in materia medica. Phenacetin is a justifiable variation. But as for acetanilid and the others, materia medica has no place for them. When we think of the number of acetanilid *habitués*, and the deaths that have resulted from its use in typhoid and other asthenic diseases we realize that the good has been much outdone by the harm.

DR. L. F. KEBLER, Washington, said that manufacturing chemists are not always given due credit for their work. He was a chemist in a manufacturing house for ten years, and he knew the sentiment without and within. His work there was as honest and sincere as that which he is now doing for the Government. Something should be done to control the sale of drugs by manufacturers directly to the public. The problem as to the matter of trademarks is working out nicely. He referred to the case of a wellknown preparation which was claimed to cure all nervous affections, including locomotor ataxia; the decision was that with such claims the preparation had no standing before the court. Finding this out, some of the manufacturers have asked the authorities how they can make their preparations creditable before the new law. This is significant as it shows that they can be kept in check, and that they are inclined to obey the law.

COMPARATIVE CLINICAL OBSERVATIONS OF THE RESULTS OF DIFFERENT IRON PREPARATIONS.

DR. ELI H. LONG, Buffalo: The comparison is between a group of the so-called peptonates of iron and the old well-known official forms. Two largely advertised preparations supposed to contain manganese in addition were chosen, and one especially prepared in the chemical department of the University of Buffalo. The official forms used were reduced iron, the tincture of the chloride and preparations of the carbonate. Fourteen tests were made upon nine patients suffering from chlorosis, or mild grades of anemia, or combined forms. The results were decidedly in favor of the official preparations, as the following summary shows: Iron peptonates used in 8 observations produced no improvement in 4 cases, very slight improvement in in 2, evident improvement in 1, and marked improvement in 1. The official forms of iron, used in 6 observations, produced no improvement in 1 case, evident improvement in 1, and marked improvement in 4. As far as these observations go they indicate that the so-called peptonates of iron are inferior to the old, well-known, simpler, official preparations.

DISCUSSION.

DR. H. C. WOOD, Philadelphia: The system requires 1-60 gr. of iron each day. With every meal we eat more iron than is necessary for the whole twenty-four hours. The iron we give as a medicine acts not as a food but as a stimulant to the blood-making organs. True organic, or food, iron has not this property, and therefore can do no good in chlorosis. The iron must enter the system in inorganic form in order to do good.

DR. OLIVER T. OSBORNE, New Haven: There are too many preparations of iron. He prefers the simpler ones and uses the tincture, reduced iron and sugar of iron. In chlorosis the trouble is chemical rather than hemopoietic; the food iron is nipped in the intestine. In anemia and chlorosis a little thyroid each day is as efficient as iron.

DR. D. OLIN LEECH, Washington, said that he preferred the tincture in small doses. He got better results from it than from the more complex preparations.

DR. BEAUMONT SMALL, Ottawa, said that he relied mainly upon the tincture, reduced iron and Blaud's pill. He believed the tincture to be the most efficient preparation.

DR. L. F. KEBLER, Washington, commended the unbiased character of the paper. Men working on a subject are apt to give undue importance to one side of the question. One should always be conservative in extolling the properties and value of drug products. Otherwise, harm may result. For instance, at the hearings of the Post-Office Department, manufacturers who have made extravagant claims for their products not infrequently claim in justification that their statements are based on the opinion expressed by some reputable physician in a paper read before some society. The claims being thus substantiated a fraud order cannot be issued. The physician thus unwittingly becomes an accomplice. He related a case in point.

DR. JAMES C. WILSON, Philadelphia, said that speaking as a clinician and not as a laboratory investigator or chemist, he believed that we cannot afford to give up entirely the use of some of the organic preparations of iron, and unfortunately most of them are of proprietary origin. Nevertheless, some of them had value, and he was obliged to give them credit. On the other

hand, he valued most highly the official preparations. He had had phenomenal success with the syrup of the iodide in diseases of children. In gonorrheal arthritis it had given him better results than any other method of treatment. He could not treat chlorosis satisfactorily without Blaud's pill.

Dr. Long, in closing, said that most of us were agreed as to the comparative value of the new advertised preparations and the old official forms of iron. In the tincture, syrup of the iodide, reduced iron and Blaud's pill, we have all that we need. The question is not as to whether the advertised preparation is efficient, but whether it is more efficient than the official forms. If not, why use it?

The following officers were elected to serve during the coming year: President, Dr. John V. Shoemaker, Philadelphia; First Vice-President, Dr. Joseph E. Janvrin, New York; Second Vice-President, Dr. Frederick H. Gerrish, Portland, Me.; Third Vice-President, Dr. Howard Van Rensselaer, Albany; Secretary, Dr. Noble P. Barnes, Washington; Treasurer, Dr. John S. McLain, Washington.

Book Reviews.

A Manual of Personal Hygiene. Proper Living upon a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, A.M., M.D. Third edition, revised and enlarged. Pp. 450. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Our commendation of the first and second editions of this book applies to the third which is now before us. It is evident that the book has appealed to a large circle of readers, and in this last edition additions of the following subjects have been made: an illustrated system of home gymnastics, a chapter on domestic hygiene, and appendix containing the simpler methods of hydrotherapy, thermotherapy and mechanotherapy, and a section on first aid in medical and surgical accidents and emergencies. It is to be hoped that the editor will not be tempted to increase too widely the scope of a book, the attraction of which lies essentially in its brevity and clear presentation of a few practical subjects.

Text-Book on Diseases of the Heart. By Graham Steel, M.D., F.R.C.P., Lecturer on Diseases of the Heart in the University of Manchester; Senior Physician to the Manchester Royal Infirmary. With an appendix on "The Volume of Blood in Relation to Heart Disease," by J. Lorrain Smith, M.A., M.D., Professor of Pathology in the University of Manchester. Philadelphia: P. Blakiston's Son & Co. 1907.

A text-book of small size dealing with a subject so much written about is hardly expected to present much that is new. Yet Graham Steel has succeeded in treating his subject in such a way as to make a very interesting book. It differs from most of such books in that heart disease is described rather from the view point of its effect on the body as a whole than from that of a diseased single organ. Dyspnea, enlarged, tender liver and dropsy first receive attention. Even when the heart itself is considered, most attention is given to the cardiac musculature in action, not to the murmurs of diseased valves. The effect of this is to give the student a clear conception of the patient with a diseased heart and some idea as how to deal with his symptoms. To the reviewer, this seems the proper perspective through which to view cardiac disease, and will serve as a counter influence to that exerted by other text-books from which most students come, stethoscope in hand, ready to listen solely to murmurs as the important means of determining diagnosis prognosis and therapy, thereby missing entirely in very many cases any proper understanding of the case.

This book is based very largely on the author's personal experience, and thereby has that vital interest always lacking in compilations. Of course it is not possible to completely ignore the work of others, but the author rarely discusses views on which his own experience has not touched. However, in so far as authority is quoted, it is almost entirely insular — not an uncommon habit of the Englishman, which seems a fault to those living beyond the bounds of his island home.

This is a good book for the younger student because it is honest, simply told and suggestive. Its attitude toward doubtful points is expressed as follows in one chapter: "The object of the writer has been to give an account of our common knowledge of heart disease, as it has been accumulated by the daily experience of those engaged in the treatment of the disease. Beyond this knowledge there is, however, a margin of imperfect knowledge shading on the other side into absolute ignorance. It has been held that the limit of instruction to the student should be that of perfect knowledge with at most a rare trespass into the perfectly known. . . . It seems desirable to admit to the student that experience has taught that there are rare occurrences which seem to militate against our common knowledge and belief. It is better he should be warned that such exist, than that his faith in well-established clinical truths should be temporarily shattered." With this in mind, a broad conservatism is to be expected, and such is found.

The older practitioner will enjoy the pleasing style and practical suggestions of this book. While it is not profound, it contains much useful information. Though there are many points on which the reader and author may disagree, there is little that should be condemned. Most would consider the author's view as to the diagnosis of adherent pericardium far too pessimistic, and the chapter of the instrumental examination of arteries and veins is too sketchy to be readily understood. In places, undue emphasis seems to be placed on the causal relations of gout. The so-called irregular gout rests on too insecure a basis to warrant much consideration as a definite factor in the production of heart disease. Then most of what the author attributes to gout applies to cardiac disease in this country where gout is an infrequent disease. However, taken as a whole, it is a book which the reviewer takes pleasure in commending.

THE BOSTON

Medical and Surgical Journal.

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THE FREQUENCY OF ANTERIOR POLIOMYELITIS.

THE frequency of acute anterior poliomyelitis is worthy of the most careful attention of the medical profession. The feeling has been growing for many years that this disease occurs in epidemic form, although its more frequent manifestation is sporadic. Various epidemics have been described in Sweden, and a very notable one at Rutland, Vt., in this country many years ago. Since then, in many places cases have occurred in sufficient numbers and so closely associated in time as to warrant the supposition that they were due to a common cause. So far as we are aware, however, the number of cases which have been observed during the past few months in New York City is quite unprecedented. It is even said that physicians are advising their patients to remain away until the epidemic which is now active shall have subsided. In our issue of Oct. 31, we printed, under the heading of Correspondence, a statement of the collective investigation of the epidemic under the auspices of the New York Neurological Society and the Section on Pediatrics of the New York Academy of Medicine. The secretary of this committee is Dr. Edwin G. Zabriskie, of 37 West 54th Street, New York, and it is altogether desirable that physicians who may be seeing these cases should report them to him with the object of determining how widespread the disease has become.

Although it seems probable that a larger number of cases have occurred in and about New York, irrespective of its greater population, it has certainly been observed by physicians in and about Boston that many more cases have occurred this year than in many preceding. Not only is this true, but apparently here, as in New York, the type of disease manifested varies widely from the ordinary text-book description of prodromal fever, followed at a short interval by a more or less extensive flaccid paralysis. Although no light has yet been shed upon the exact etiology of the affection, either through lumbar puncture or by other means of investigation, nevertheless a large amount of information, extremely valuable from the clinical and pathological standpoint, has already been gained. The most striking feature of many of the cases has been rigidity of the neck, simulating a meningitis, together with much tenderness over the peripheral nerves, simulating closely a neuritis, accompanied or followed by a more or less extensive paralysis, not infrequently irrespective of the sensory disorders. In general, therefore, it appears to be conclusively shown that the infection, whatever it may be, which has commonly been called poliomyelitis, involves various other areas of the nervous system, as well as the ventral horns of the cord. The pathological anatomy, which has been studied with renewed interest, bears out in great measure the clinical signs. A most valuable paper on the subject has recently been published (*Journal of the American Medical Association*, Oct. 26, 1907) by Harbitz and Scheel, of Christiania, on "Epidemic Acute Poliomyelitis in Norway in the Years 1903 to 1906." These writers present a masterly clinical and pathological report of the disease, the latter based on nineteen autopsies. The evidence adduced from this study is conclusive that poliomyelitis is an infection of as yet unknown etiology, that it manifests itself on the pathological side by widespread inflammatory reactions throughout the nervous system, brain, meninges and cord. Poliomyelitis is, therefore, a misnomer, except as regarded from the clinical standpoint that we are justified in calling a disease after its predominant manifestation. Admitting this widespread inflammatory reaction, it is natural that the clinical phenomena should depart in more or less measure from the accepted text-book description, and it is apparently these unusual types of the disease that we are now seeing, and which in many cases prove difficult of diagnosis for a considerable time after the onset. It is further interesting that Harbitz and Scheel, although frequently observing neuritic symptoms, found no pathological evidence of neuritis in their sections. The cause of this very striking symptom, therefore, remains obscure. The question of early diagnosis is still further obscured by the fact that the

disease frequently shows itself in adults — we ourselves have knowledge of two fatal cases within the last two months — and may very easily be mistaken for typhoid fever, as well as for meningitis or a toxic peripheral neuritis.

We beg to call our readers' attention in the first place to the prevalence of the disease, and in the second to the bizarre form in which it may manifest itself. It should no longer be regarded as one of the rarities occurring in general practice, but rather as a type of infection which certainly at this time is likely to be met in widespread distribution.

THE ART OF PROGNOSIS.

Modern medical teaching rightly has for its chief aim the development of the power of diagnosis. Students are taught not only the significance of physical signs and symptoms, but also are expected to be able to draw conclusions from examinations of the blood and various body excretions with a view to the accurate determination of the general physical conditions. That these means, given a student of ordinary intelligence, lead to the desired end is not to be questioned. However distorted the general perspective may be, we have no doubt that accurate diagnoses are much more often made by these modern means than formerly, when common sense and experience were the diagnostician's chief aids.

The question, however, arises whether this increased power of accurate diagnosis has led to a keener and more intelligent appreciation of the outcome of disease. Are our students systematically taught to observe and weigh the facts which point toward a serious or a favorable outcome with the same attention that they are instructed in determining the nature of the malady? We are inclined to think not. There is a certain excess of attention given to the causes and the development of disease, and relatively little to the means by which we may determine outcome. The problems are naturally quite unlike in their character, but we are nevertheless convinced that a course of lectures devoted to the subject of the prognosis of disease might well find a place of usefulness in the medical curriculum. It is certainly true that the chief demand made upon the physician, and particularly the consultant, is in relation to prognosis. Other matters sink into insignificance in the minds of friends and relatives. Any physician of wide experience will say that his greatest difficulty lies in determining with a fair degree of accuracy what the outcome of an illness is to be. The mistakes that are made are too numerous and apparent to demand consideration here. The nature of the question is such that mistakes are sure to continue, but it should certainly be our aim to minimize such mistakes to the last degree and to insist that students should be given the full benefit of the wide experience of their teachers in this regard. It is evident that quite other qualities than laboratory training and the capacity for ordinary observation are demanded if our prognostic ability is to stand on a par with our capacity to make an accurate diagnosis. The judicial attitude of mind needs to be developed to the fullest degree, together with a knowledge, bred of experience, of the mental and physical attributes of the patient, which no mere book study nor laboratory training is competent to provide.

MEDICAL NOTES.

Committee for Holland, International Tuberculosis Congress. — Dr. P. K. Pel, of Amsterdam, has been appointed president, and Dr. B. H. Vos, of Hellendoon, secretary of the National Committee for Holland of the forthcoming International Congress on Tuberculosis.

Tuberculosis in Pennsylvania. — Dr. Samuel G. Dixon, Commissioner of Health for Pennsylvania, is establishing a dispensary for tuberculosis in every county in the state in accordance with the law recently passed. In Philadelphia the dispensary, in charge of Dr. Alfred Stengel, will be the center from which various parts of the city may be easily reached.

A Tribute to Dr. Horatio C. Wood. — Through the interest of Dr. Horatio C. Wood, Emeritus Professor of Materia Medica, Pharmacy and General Therapeutics, at the University of Pennsylvania, a new settlement building has been given to the university. This settlement, conducted by the Christian Association of the University of Pennsylvania, has developed steadily since its inception about ten years ago. The present building has been erected at a cost of $60,000.

A Hospital for the Treatment of Diseases by Electro-Therapeutic Methods. — In gratitude to Dr. Georges Gauthier, of Paris, who recently relieved Mrs. Vanderbilt of a nervous affection from which she had long been suffering,

William K. Vanderbilt, of New York, has given the funds for the erection and equipment of a hospital in the city of Paris for the treatment of disease by electro-therapeutic methods. This building, which will be provided with all the most approved appliances in this department of medicine, is now in course of construction in the Rue Leonardo da Vinci, and the institution, it is stated, will be known as the The Foundation Vanderbilt. It is to contain 250 beds, and will be opened about the first of the year, with Dr. Gauthier at its head.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Nov. 13, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 46, scarlatina 28, typhoid fever 10, measles 25, tuberculosis 31, smallpox 0.

The death-rate of the reported deaths for the week ending Nov. 13, 1907, was 17.71.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 9, 1907, was 205, against 219 the corresponding week of last year, showing a decrease of 14 deaths and making the death-rate for the week 17.54. Of this number 112 were males and 93 were females; 201 were white and 4 colored; 121 were born in the United States, 80 in foreign countries and 4 unknown; 46 were of American parentage, 128 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 56 cases and 2 deaths; scarlatina, 41 cases and 0 deaths; typhoid fever, 9 cases and 4 deaths; measles, 14 cases and 0 deaths; tuberculosis, 35 cases and 19 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 19, whooping cough 0, heart disease 27, bronchitis 8 and marasmus 4. There were 21 deaths from violent causes. The number of children who died under one year was 39; the number under five years, 47. The number of persons who died over sixty years of age was 51. The deaths in public institutions were 62.

There were 2 cases and 1 death reported from cerebrospinal meningitis during the week.

BOSTON SCHOOL PHYSICIANS ASSOCIATION. — An organization of the Medical Inspectors of Schools has been formed under the name of the Boston School Physicians Association, with the following officers: President, Dr. H. E. Marion; Vice-Presidents, Drs. J. F. O'Brien and D. G. Eldridge; Secretary, Dr. H. J. Perry; Executive Committee, Drs. J. L. Ames, W. F. Bancroft and M. J. Cronin.

BEQUESTS BY A BOSTON POLICEMAN. — By the will of the late Stephen Clougherty, for many years a patrolman in the South Boston district, five charitable institutions become beneficiaries in the sum of $1,000 each; among these are the Carney Hospital and Free Home for Consumptives.

CENTENARIANS. — The death of Dennis Sheckrow, of Millbury, Mass., is announced at the age of one hundred and three years. He leaves twenty grandchildren and nineteen great-grandchildren.

Calvin Worth, of Concord, N. H., reputed to be the oldest man in that city, died Nov. 6 at the age of one hundred and one.

NEW YORK.

INCORPORATION OF SAGE INSTITUTE. — The Sage Institute, the object of which, it will be remembered, is medical research, and especially in diseases of advanced life, and the creation of which is due to the generosity of Mrs. Russell Sage, was duly incorporated in Albany on Nov. 1. The incorporators named are: Prof. Graham Lusk and Drs. Edward G. Janeway, Theodore C. Janeway, D. Bryson Delavan and Joseph D. Bryant, and the headquarters of the institute are to be on Blackwell's Island, where the city department of charities has provided a laboratory and other accommodations for its work.

MEETING OF SECTION OF ANTHROPOLOGY AND PSYCHOLOGY AT AMERICAN MUSEUM OF NATURAL HISTORY. — During the past week, at a meeting of the section on Anthropology and Psychology of the American Museum of Natural History, papers were read by Dr. C. Ward Crampton, on "Physiological Age," and by G. L. Meylan, on "Some Physical Characteristics of College Students." At the same institution also an illustrated lecture on "The Plasmodium of Malaria" was given by Dr. James H. Stebbins, Jr., before the New York Microscopical Society.

INCREASE IN INSANITY. — The annual report of the State Commission in Lunacy, just published, shows that there has been a steady increase in insanity since 1897, and that at the close of the year 1906 there were 26,357 insane in the

hospitals in the State of New York, or a proportion of about one to each three hundred of the population. It is stated that the highest proportions in mental disturbances are found in the small urban communities, a condition which is largely accounted for by the fact that in the large cities the rapid influx of population tends to keep the proportion down.

Bequests. — Under the will of Alexander Maitland, formerly of New York, who died recently at his home in Princeton, N. J., $110,000 is left to charitable institutions and societies. Among the beneficiaries are the Presbyterian Hospital of New York, which receives $20,000, and the Presbyterian Rest for Convalescents at White Plains, N. Y., which receives $10,000.

Death of a Veteran Patient. — After spending eighteen years in Bellevue Hospital suffering from organic disease of the heart, Edward Lennok, a native of Scotland, died in the institution on Nov. 4. As long as his illness permitted, he acted as history clerk in the hospital, but for a considerable time past he had been confined to bed. In recognition of the faithful services of Lennok, who was without means, the members of the house staff of Bellevue subscribed an amount sufficient to defray the funeral expenses, and he was buried with all due respect in St. Michael's Cemetery, Astoria.

Increase of Cancer. — In its last monthly bulletin the State Department of Health makes the following statement in regard to cancer: "The cancer problem is assuming more and more menacing proportions, there being reported 572 deaths from this cause in September, 1907, as against 526 in the same month last year and an average for five years of 456. Thus, while deaths from tuberculosis are held practically stationary, we are doing nothing to hold cancer in check as a cause of mortality."

Medical Men as Mayors. — The returns of the recent elections in New Jersey show that no less than seven medical men are elected mayors. In Paterson the successful candidate was Dr. Andrew F. McBride, formerly county physician of Passaic County, and the other cities now provided with medical mayors are Trenton, Rahway, Atlantic Highlands, Summit, Frenchtown and Washington.

Request for New York Exhibit at Tuberculosis Congress. — At the request of Dr. John S. Fulton, Secretary General of the Tuberculosis Congress to be held in Washington next year, Governor Hughes has sent letters to various State departments, suggesting that New York shall make an exhibit at the Congress. In his letter to the head of the Health Department he refers particularly to the gratifying results which have been accomplished at the Raybrook Sanitarium for incipient tuberculosis in the Adirondacks. A request was also made to President Schurman of Cornell University, to name delegates to the Congress from the veterinary and agricultural colleges.

Current Literature.

New York Medical Journal.
Oct. 19, 1907.

1. Taylor, R. W. *A Contribution to Heredosyphilology.*
2. Donley, J. E. *John Riolan, the Son, Conservative.*
3. *Taltavall, W. A., and Gies, W. J. *Brief Contributions to Biological Chemistry. First Series.*
4. White, J. H. *A Partial Résumé of the Prophylaxis of Tropical Disease.*
5. Fischer, L. *An Aid to the Diagnosis of Tuberculosis in Infancy and Childhood.*
6. Johnson, J. E. *Plastic Operations.*
7. Le Fevre, W. I. *The Localization of Foreign Bodies in the Eye with the X-Ray, with Description of a New Apparatus.*
8. Butte, H. J. *The Differential Diognosis between Chronic and Recently Acquired Herniæ from a Medico-legal Standpoint.*

3. The writers found that quinic acid, whose compounds are exploited as valuable therapeutic agents in gout, did not materially affect the metabolism of uric acid in the dog. [R. I. L.]

The Journal of the American Medical Association.
Oct. 19, 1907.

1. *Hunt, R. *The Relation of Iodin to the Thyroid Gland.*
2. Reynolds, E. *Constitutional Ill-Equipment of the Patient as a Factor in Determining the Performance of the Primary Cæsarean Section.*
3. Davis, E. P. *The Delivery of Debilitated Women, with Especial Reference to the Interest of the Child.*
4. Hollopeter, W. C. *The Duty of the Physician to the School Child.*
5. McAlister, A. *The Greatest Menace to Whole Milk in Cities' Supply.*
6. Tuley, H. E. *Certified Milk and the General Milk Supply of Louisville.*
7. Zemp, E. R. *The Absorption and Elimination of Some Commonly Used Drugs, with Practical Deductions from a Knowledge of the Same.*
8. Harris, M. L. *The Paraffin Injection Treatment of Inguinal Hernia.*
9. Pusey, W. A. *The Use of Carbon Dioxid Snow in the Treatment of Nevi and Other Lesions of the Skin. Preliminary Report.*

1. The resistance of certain animals to acetonitrile is increased, of others decreased, by the feeding of thyroid substance. The resistance of the ordinary laboratory animals to morphine is diminished by the feeding of thyroid. The physiologic activity of the different thyroids as tested by morphine and acetonitrile varies directly with the percentage of iodin present. Iodin-free thyroid does seem to possess a very slight degree of activity. A similar but less

degree of activity is found in other glands, as ovaries, testes, prostate, etc. The various iodin compounds used alone altered in a similar manner the resistance of animals to morphine and acetonitrile, but the alteration no longer took place after removal of the thyroid gland. Hence it is assumed that the iodin acted only through the thyroid gland. The writer suggests that perhaps the beneficial action of the iodides in some diseases, *e. g.*, in arteriosclerosis, may be due in reality to its action on the thyroid and consequent increased thyroid secretion. He also suggests that some of the toxic symptoms of iodin are probably symptoms of thyroidism. Simple goiters, as a rule, are poor in iodin and may rapidly disappear after the administration of one of the iodin compounds. It is assumed that the iodin converts a relatively inactive iodin-poor thyreoglobulin into a more efficient compound, besides aiding in the secretion. In exophthalmic goiter the thyroid gland seems to be in a stage of hyperactivity, and iodin makes the condition worse by rendering the secretion still more active. [R. I. L.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.
SEPTEMBER, 1907.

1. MACCALLUM, W. G. *On the Teaching of Pathological Physiology.*
2. ESTES, W. L., AND CECIL, A. B. *The Relation of Iodine to the Parathyroid.*
3. MCCLURE, R. D. *Pancreatic Atrophy in a Dog Following Impaction of Calculi in the Duct.*
4. MACCALLUM, W. G., THOMSON, H. S., AND MURPHY, J. B. *Tetany after Parathyroidectomy in Herbivora.*
5. ESTES, W. L., JR. *Parathyroids of the Horse.*
6. MACCALLUM, W. G. *On the Pathological Anatomy of Lymphosarcoma and its Status with Relation to Hodgkins's Disease.*
7. *MACCALLUM, W. G., AND FABYAN, M. *On the Anatomy of a Myxedematous Idiot.*
8. FABYAN, M. *Leiomyomata of the Gastro-Intestinal Tract, Associated with Fibromata Mollusca, and Subcutaneous Hemangiomata.*
9. FABYAN, M. *Disseminated Subcutaneous Fat Necrosis, Occurring in an Infant without Other Lesions.*
10. FABYAN, M. *A Case of Primary Carcinoma Supervening in a Cirrhotic Liver.*
11. MEADER, F. M. *A Study of the Anatomical Relations in a Congenital Cystic Kidney.*
12. CECIL, A. B. *Phlegmonous Gastritis.*
13. *MARINE, D. *On the Occurrence and Physiological Nature of Glandular Hyperplasia of the Thyroid (Dog and Sheep), Together with Remarks on Important (Human) Problems.*
14. HELMHOLZ, H. F. *Experimental Epithelial Proliferations of Skin and Mucous Membranes.*
15. HELMHOLZ, H. F. *An Experimental Multiple Chondroma.*
16. HELMHOLZ, H. F. *Two Cases of Atresia of the Small Intestine: I. Multiple Congenital Atresia of the Jejunum. II. Valvular Atresia and Secondary Inflammatory Obstruction of Jejunum.*
17. HELMHOLZ, H. F. *A Syncytiomatous Tumor of the Stomach.*
18. WHIPPLE, G. H. *The Relation of Intestinal Infection to Visceral Tuberculosis.*
19. WHIPPLE, G. H. *A Hitherto Undescribed Disease Characterized Anatomically by Deposits of Fat and Fatty Acids in the Intestinal and Mesenteric Lymphatic Tissues.*
20. WHIPPLE, G. H. *Pancreatitis and Focal Necrosis.*

7. The writers describe in detail the pathological findings in a clinically typical myxedematous idiot. There were no thyroid lobes or isthmus, only two small lobulated cystic structures in the neck, which microscopically somewhat resembled thyroid tissue. At the root of the tongue a small nodule of typical thyroid tissue was found. Apparently this remnant had undertaken regeneration as actively as possible. The parathyroids were normal. The hypophysis showed general hypertrophy. The skeleton was smaller than normal, but the proportions were well preserved.

13. Marine finds iodine essential for normal thyroid activity. Glandular hyperplasia of the thyroid is a physiological reaction to a deficiency in iodine, and it is to be considered cretinoid in nature. These same changes were produced in puppies by thyroidectomy of the mother and in normal dogs' thyroids by partial removal. The iodine content of the thyroid gland varies inversely with the degree of glandular hypertrophy. Iodine or its compounds will reduce this glandular activity in dogs, and will prevent the occurrence of glandular hyperplasia in thyroids of puppies from thyroidectomized mothers and after partial removal of normal glands. The writer considers that colloid goiter is usually preceded by a stage of glandular hyperplasia, and in its uncomplicated form is the quiescent stage of the same. [R. I. L.]

SURGERY, GYNECOLOGY AND OBSTETRICS.
SEPTEMBER, 1907.

1. *SCHMAUCH, G. *The Histologic and Clinical Significance of Malignant Chorio-epithelioma.*
2. PARKER, R. M. *Pleural Fistula.*
3. *MORLEY, W. H. *Post-Operative Thrombophlebitis.*
4. FRICK, W. J. *Reconstructive Endo-aneurysmorraphy.*
5. MCKENNA, C. H. *An Anomaly of the Cœliac Axis.*
6. *MANDELBAUM, F. S. *The Pathology of New Growths of the Bladder.*
7. COOK, J. E. *A Case of Tumor of the Carotid Body.*
8. REED, C. B. *Gangrene and Eclampsia.*
9. *GARRÈ. *On Resection of the Liver.*
10. GOOD, F. I. *A New Obstetric Forceps.*
11. BARTLETT, W. *A Simple Method of Removing Stones from the Lower Ureter.*
12. BREWER, G. E. *The Technic of Draining Circumscribed Abscesses of the Pancreas.*
13. MANN, A. T. *Empyema.*
14. MARCY, H. C. *Biliary Obstruction from Calculi in the Common Duct.*
15. SINGLEY, J. D. *Some of the Factors that Influence Mortality in Operative Surgery.*

1. Following a careful review of the subject of malignant chorio-epithelioma, Schmauch is of the opinion that there is only a gradual difference between the simple invasion of the uterine muscles by villi and their sequelæ (adherent placenta, the common and destructive mole); between the localized chorio-epithelial growths limited to the uterus and placental region, and the villous infarcts, developed by deportation of villi; and finally between those cases in which the lungs were able to retain and master the scattered fetal cells (mostly syncytial and atypical forms), and the typical chorio-epithelioma malignum, which becomes generalized through metastases. Only the latter two types deserve the name of malignant chorio-epithelioma.

3. Morley has reviewed the literature and 11 cases of post-operative thrombophlebitis. Nothing new is added to the present knowledge of the subject.

6. Mandelbaum gives a valuable and interesting account of the pathology of new growths of the bladder. The various forms of tumor there occurring are well illustrated by photo-micrographs.

9. Professor Garrè ascribes his success in resection of the liver to the individual ligation of vessels with fine silk, and the subsequent through-and-through suture of the liver tissue with stout catgut. Approximation of the two incised surfaces of liver tissue is in his opinion the most successful way of controlling hemorrhage. It being best to press together two wounded surfaces by suture wherever possible, the resection should be done in shape of a wedge placed in approximately vertical direction to the margin of the liver. The liver needles of Kousnetzoff are of definite value. [W. C. Q.]

BRITISH MEDICAL JOURNAL.
OCT. 19, 1907.

1. BRANTHWAITE, R. W. *Inebriety; its Causation and Control.*
2. CRAIG, J. *Address on the Choice of a Medical Career, with Remarks on Medical Ethics and Etiquette.*
3. *STEPHENSON, S. *The Calmette Serum Reaction in Ophthalmology.*
4. BEARDS, C. *A Case Showing the Stokes-Adams Phenomena.*
5. FORTUNE, J. *Two Cases of Pernicious Anemia with Unusual Features.*

6. Shapland, J. D. *Case of Spleno-Medullary Leukemia.*
7. Gifford, G. T. *A Forgotten Swab; Another Warning.*
8. *Simpson, W. J. R., and Ziemann, H. *Antimalarial Sanitation.*
9. Charles, R. H., Bose, R. K. C., Bose, C. L., Chakravarti, S., Roy, R. D., and Sandwith, F. M. *Discussion on Diabetes in the Tropics.*
10. Beckett, T. G. *Phleboliths and the Roentgen Rays.*
11. Nash, W. G. *Repeated Rupture of the Tunica Vaginalis.*

3. Stephenson presents the results in 30 cases of eye disease in which he had used the Calmette ophthalmo-tuberculin reaction for diagnosis. There were 6 cases of phlyctenular keratitis in children, only 2 of whom showed tuberculous lesions elsewhere. Reaction was positive in each case. Three cases of choroiditis reacted positively, although in none had a tuberculous focus been found by clinical examination. In 8 cases of interstitial keratitis 5 showed definite signs of inherited syphilis, and none of these reacted; the other 3 cases were positive to the test. Of 3 cases of episcleritis one reacted positively. One case of tubercle of the iris in a child reacted positively, and later the result was confirmed by a positive reaction to tuberculin given subcutaneously. A case of tubercle of the cornea in a girl of twelve reacted positively to the eye test, and later to tuberculin injected under the skin. In two cases of chronic irido-cyclitis he obtained the ophthalmo-reaction and also a positive tuberculin reaction. In one of these on tapping the anterior chamber of the eye and examining the fluid thus obtained, tubercle bacilli were found. The preparation can be obtained from the Pasteur Institute, Lille, France, in two forms: (1) as dry tuberculin in small glass vials to which the physician adds 10 drops of water, and (2) as a solution in hermetically sealed glass tubes, each of which contains several drops of the product ready for immediate use. The cost is not great.

8. In the Section on Tropical Diseases (British Medical Association) Simpson, Ziemann and others present papers on anti-malarial sanitation. Simpson discusses recent discoveries which have rendered this more precise and less costly. He discusses the first steps to be taken in a malarious district; the distance from dwelling houses that a protected zone is required; the different conditions which demand different modes of treatment, such as measures required in localities subject to tidal floodings, or in marshes at the foot of hills, and the anti-mosquito sanitation of dwellings. Ziemann discusses malaria prevention in uncultivated districts, particularly in regard to the proper administration of quinine. [J. B. H.]

The Lancet.

Oct. 19, 1907.

1. Coplans, M. *Some Vital Properties of Milk.*
2. Walsh, D. *Frontal Band Alopecia as a Possible Sign of Exophthalmic Goiter and Associated Conditions.*
3. Macewen, J. A. C. *Case of Intraparietal Hernia with Very Small Peritoneal Opening Giving Rise to Severe Abdominal Pain.*
4. Dobson, M. S. *Multiple Fibro-myxomata of the Choroid Plexus.*
5. Clarke, H. J. *Interesting Case of Acute Intestinal Obstruction.*
6. King, C. *Vicious Circle after Gastrojejunostomy; Subsequent Lateral Anastomosis; Recovery.*
7. Chatterjee, G. C. *A Mechanism for Replacing the Cotton Plugs of Test Tubes used for Receiving Culture Media.*
8. Moon, R. O. *Notes of Two Cases of Paroxysmal Tachycardia.*
9. Davidson, J. *Blood Pressure in Fevers.*
10. Collinson, F. W. *Case of Intussusception in an Infant Three Months Old; Enterectomy; Recovery.*
11. Thompson, J. A. *Mode of Spread and the Prevention of Plague in Australia.*

Deutsche Medizinische Wochenschrift. No. 35.

Aug. 29, 1907.

1. *Körte, W. *Treatment of Angioma Racemosum.*
2. *Gentzen, M. *Secretion of Gastric Juice in the Fasting Stomach.*
3. Schirokauer, H. *Atony of the Stomach and Chlorosis.*
4. *Goldberg, B. *Contribution to the Knowledge of Nervous Bladder Affections.*
5. Cohn, L. *Investigations with Thephorin.*
6. Port, F. *Poisoning with Maretin.*
7. Neuberg. *Contagiousness of Condylomata Acuminata (Venereal Warts).*

1. Körte has encountered eight cases of racemose arterial angioma. Trauma and vascular nevus were excluded from the etiology, although in one case it apparently developed after freezing of the ear. In the other cases it dated from early childhood or was congenital. He regards the affection as a true growth with a progressive tendency, and calling for extirpation. The process is essentially a new formation of arteries, accompanied by eccentric hypertrophy of the previous existing small arteries. He describes the technic he follows in removing the angioma after ligating the vessels. The danger of gangrene renders the operation unusually difficult on the extremities, and amputation may be necessary as the last resort. After removal of the new-formed vessels making up the main tumor, the peripherally enlarged afferent arteries subside spontaneously to normal size.

2. Gentzen has studied Sahli's desmoid test when employed with the fasting stomach. In 53 healthy persons the methylene-blue pill taken dry into the fasting stomach was dissolved and absorbed in a short time in 52 cases, in 33 instances in less than two hours. Methylene-blue in keratin capsules, which are certainly not dissolved in the stomach, was never refound in the urine in any of his numerous tests. He concludes from his experience that there must be sufficient digestive juice in the fasting stomach to dissolve the catgut string. The digestion in these cases is not the result of mechanical or psychic stimulation. If the methylene blue is detected in the urine from one to three hours after taking, it must have been absorbed in the stomach, as absorption from the intestine does not show until after a much longer interval. The healthy fasting stomach gives the desmoid reaction unusually promptly, and the test can be applied in the clinic, dispensing with the test meal. To determine whether the pathologic fasting stomach behaves in the same way will be the subject of a further research.

4. Goldberg illustrates with a dozen cases the differences between frequent micturition of nervous or psychopathic origin and the pollakiuria that follows enuresis in childhood. The former is often observed after opportunity for venereal infection, and is cured by assurance that such infection has not taken place. In other cases it is without relation to the sexual life, and ceases after regulation of the intake of fluids and exercises; he recommends also 20 drops of the extract of rhus aromatica three times a day. The pollakiuria following enuresis in childhood is much more obstinate. It is aggravated by ingestion of fluids, and is best treated with the usual measures for enuresis. Complete neurasthenic retention of urine occasionally occurs; Goldberg reports two such cases [L. G. M.]

No. 36. Sept. 5, 1907.

1. *Heine. *Diagnosis and Treatment of Iritis.*
2. Cassirer and Bamberger. *A Case of Polycythemia and Obsession Neurosis.*
3. *Westenhoeffer, M. *Contribution to the Pathological Anatomy of True Plethora.*
4. *Veil, W. *Observations on the Detection and Agglutination of Typhoid Bacilli in the Blood.*
5. Poljakoff, W., and Chorosehko, W. *Polyneuritis and the Colon Bacillus.*
6. Guttmann, W. *Significance and Technic of the Patellar Reflex.*
7. *Neuhäuser, H. *Actinomycosis of the Female Genitalia.*
8. Schürmann. *Injury of Neck Destroying the Larynx.*

1. Heine states that iritis is always a serious affection, and he keeps the patient in bed, or at least in his room. Institutional treatment is always the best. He gives laxatives, and forbids all physical exertion. Moist warm dressings are preferred to cold, and occasionally cupping gives good results. Salicylates, sweat baths and dia-

phoretics are the chief methods of treatment; all stimulants are prohibited. With suspicion of syphilis mercurial enjunctions and potassium iodide should be pushed, in rheumatic iritis general measures with courses of mineral waters. In tuberculous cases, beside the general measures, tuberculin is often beneficial; the administration must be kept up for a long time and small doses used, never pushing it to a febrile reaction ($\frac{1}{1}\frac{1}{0}$ mgm. two or three times a week for several months). In mixed infections mercurial treatment may be combined with the use of tuberculin. The question of removal of injured eye to prevent a sympathetic iritis in the sound one is still open to debate.

3. Westenhoeffer reports a case of true plethora, which, he claims, is the fifth recorded case confirmed by the pathologic anatomic findings. Nothing is known concerning the etiology of this rare condition, but it certainly has no relation to the ordinary passive congestions, or to the condition known as, "full blooded," which may be induced by too rich diet or excessive drinking. Neither is the condition due to the withdrawal of the fluid elements of the blood. It is a true disease, and when once it is developed it continues on to a fatal end. The characteristic anatomic lesions are in the marrow of the long bones, as Türk had previously surmised from study of the blood in living cases, and the process is essentially the persistence of the infantile phase. The spleen, being the organ chiefly concerned in the destruction of the red cells, is invariably enlarged.

4. Veil, in reporting the results of the investigations made in the laboratory of the Strasburg Board of Health, says that he finds the detection of typhoid bacilli in the blood the surest means of diagnosis up to the third week, after that the agglutination test becomes much more reliable. He employs the method of Kayser, growing the bacilli for fourteen to twenty hours in normal ox-gall and then transferring to any of the well known differential culture media. In 210 cases he only failed four times to demonstrate typhoid or paratyphoid by blood culture or the agglutination test.

7. Neuhäuser reports from Professor Israel's clinic in Berlin a rare case of primary actinomycosis arising in the right ovary and involving the uterus and vagina. An operation was undertaken but the patient died later. The pathological findings confirmed the diagnosis.

[L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 36. SEPT. 3, 1907.

1. *COLLIN, R. *Behring's, "Tulase" in the Treatment of Tuberculosis of the Eye.*
2. RIEDER, H. *The Use of Short Exposures to the X-Ray in Therapeutics.*
3. *MANDELBAUM, M. *A New Bacillus Found in Cases with Clinical Symptoms of Typhoid.*
4. HONIGMANN, F., AND SCHÄFFER, J. *Experiments on the Action of Bier's Hyperemia in Inflammations.*
5. STRASSNER, H. *Researches on the Origin of Tuberculosis of the Lungs.*
6. GRAEFFNER. *A Study of 221 Cases of Tabes Dorsalis with Special Reference to Laryngeal Symptoms.*
7. PEISER, A. *The Pathology of the Early Stages of Appendicitis.*
8. BRANDT, C. E. *Appendicitis and Carcinoma of the Appendix.*
9. FREY, G. *Does Human Milk Cause Hemolysis?*
10. HUBER AND BICKEL. *Combinations of Formaldehyde and Lime in Room Disinfection (Preliminary Report).*
11. WEBER, A. *A Case of Primary Tuberculosis of the Mouth Due to Bovine Tubercle Bacilli.*
12. MANN G. *Severe Acute Anemia after Acute Rheumatism.*
13. HARTOG, E. *Uncommon Developmental Differences Occurring in Twins.*

1. Collin reviews Behring's work on bovine and human tuberculosis. In animals he was able to immunize and to cure, by means of his tulase preparations, especially the tulase lactin (a bacterial emulsion). With this substance he and others have had good success in treating localized tuberculosis in man. Another substance, antitulase, prepared by immunizing horses against the tulase lactin, is now in use. The former, after long continued use, confers an active immunity, the latter a short-lived passive immunity after the manner of diphtheria antitoxin. The author has used the above preparations in 25 cases of tuberculosis of the eye. With tulase lactin he begins with a dose of .01 mgm. and doubling the dose daily reaches 8 mgm. at the end of ten days, when there comes a pause of ten days in the treatment. If during the first ten days a general reaction is noted the treatment is stopped for twenty days. Antitulase is given in an initial dose of 100 mgm., and doubled daily till 2,000 mgm. are given. It affects mostly the local lesion, whereas the tulase lactin affects the general condition. All the author's cases cleared up under treatment, and though the period since disappearance of symptoms and signs is not yet long enough to permit of a positive judgment, he believes that we have in the tulase preparations a specific, in eye tuberculosis at least.

3. In 6 cases, clinically resembling typhoid fever in all points, Mandelbaum has isolated a bacillus in pure culture from blood and stools, which is distinct from the B. typhosus, and from the paratyphoid organisms of BRION and Kayser, and Schottmüller. He calls this new organism the bacillus metatyphi. The cultural differences are that the new bacillus has a much more intense growth on plain agar; on glycerin agar it forms constantly crystals resembling tyrosin, which are composed of a combination of calcium with an organic acid. These crystals are probably due to the action of the secretion of the bacillus on the glycerin agar; in blood agar, both the typhoid and paratyphoid organisms act on the blood pigment, causing a greenish yellow color to appear; this is never seen in cultures of the B. metatyphi. Animal inoculation shows the new bacillus to be less virulent than the typhoid, and the 6 cases did not run a severe course. The author concludes that his organism is distinct from, but closely related to, the B. typhosus.

[R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 35. SEPT. 2, 1907.

1. KATHE, H. *The Floating Power of the Lung and its Relation to Child Murder.*
2. *MICHAELIS, L. *Wassermann's Syphilis Reaction.*
3. *WATERMANN, O. *Atoxyl Treatment of Syphilitic Affections of the Nerves of the Eye.*
4. FLEISCHER, F. *Turgo-tonographic Estimation of Blood Pressure.*
5. *SELLEI. J., AND UNTERBERG, H. *Communication on the Pathology and Treatment of Gonorrheal Pyelitis.*
6. *ACHERT, R. E. *The Prolonged Use of Digitalis.*
7. LOEWENTHAL. *The Action of Radium Rays on Man.*

2. Michaelis reviews Wassermann's work on the so-called syphilis serum reaction. In a series of cases, the author found the reaction positive in 75% of syphilitics and in 8% of nonsyphilitics. From a series of researches with the reaction in liver extracts, he is inclined to differ with Wassermann's conclusions, *i. e.*, that the reaction truly shows the presence of an antibody to the syphilitic toxin. So far he believes the reaction to be more or less empiric, but it has certain diagnostic value.

3. Watermann employed atoxyl in the treatment of 10 parasyphilitic cases (syphilis of the central nervous system and tabes with optic atrophy). The results were disappointing, as either no effect was produced, or else marked diminution of sight, and severe nervous or gastro-intestinal symptoms followed its use. He considers atoxyl dangerous in such conditions.

4. Sellei and Unterberg report 5 cases of gonorrheal pyelitis, in which the diagnosis was made by catheterization of the ureters; the gonococcus was found alone in one case, in the others a mixed infection was present. The gonorrheal pyelitis is always secondary to a cystitis. Most of these cases yield to rest and internal medication. In resistant cases, the authors have had surprising success by washing out the pelvis of the affected kidney with boric acid solution, silver nitrate 1–1,000, or 1% to 2% collargol.

6. In a large number of cases seen by Achert, a cumulative action of digitalis has never been noted. He believes that long continued use of digitalis is most valuable in

chronic affections of the heart muscle, while in fatty degeneration he has had little success from this procedure. The dose to be recommended over long periods is 7 to 14 drops, once or twice daily. [R. D.]

No. 36. Sept. 9, 1907.

1. *Oppenheim, H., and Borchardt, M. *A Case of Tumor of the Cord Presenting Great Diagnostic Difficulties. Successful Operation.*
2. Citron, J. *Tuberculosis Antibodies and Tuberculin Reaction.*
3. *Gutmann, A. *Mikulicz's Disease and its Relation to Syphilis.*
4. Glaubermann, J. *Clinical Observations on the Effect of Atoxyl in Relapsing Fever.*
5. Tugendreich, G. *Two Cases of "Mongolian Spots" (Mongolenkinderfleck) in Berlin Infants.*
6. Rollin. *Nutritive Anemia.*
7. *Bruhns, C. *The Prognosis as to Life in Syphilis.*

1. Oppenheim describes a case of a twenty-three-year old male patient, who had a spastic paresis of the left leg, with atrophy of the quadriceps, also spasticity of the right leg, marked disturbance of sensation, and slight bladder and rectal symptoms. The diagnosis rested between, (1) caries, (2) intramedullary tumor, and (3) extramedullary tumor. After much study the latter diagnosis was made. At operation, performed by Borchardt, a diffuse extramedullary fibroma at the level of the twelfth dorsal vertebra was found and removed, with great improvement of symptoms. The authors consider that in all cases of doubt as to whether the tumor is of the cord or meninges, an exploratory laminectomy is not only advisable, but imperative.

3. Gutmann describes Mikulicz's disease as a symmetrical swelling of the lachrymal and salivary glands, often associated with general glandular enlargement, and without pathologic findings in the blood. The author reports such a case in a young man of twenty-seven, who had had a syphilitic infection three years before. Under KI and general hygiene the condition disappeared entirely. This is the first case of Mikulicz's disease in which the syphilitic origin is proved beyond a doubt.

7. After the disappearance of clinical manifestations, there is no means at present in the hands of the physician to say definitely that a syphilitic is cured. A review of life insurance tables shows that many syphilities die from a late result of their infection. Bruhns gives figures of life insurance reports, and finds that four out of five of the insured syphilitics die from sequelæ of their infection, inside of twenty years after the first appearance of the disease. How great the influence of early treatment is in these cases cannot be decided. The author suggests a properly organized research into this question, as being a very vital one. [R. D.]

Correspondence.

LETTER FROM PARIS.

[*From our Special Correspondent.*]

On Weil's New Treatment of Hemorrhage in Hemophilia, Purpura, and Allied Conditions.

Paris, Oct. 29, 1907.

Mr. Editor: During the past two years quite a series of articles by P. Emile Weil has been appearing in the French medical press on the state of the blood in hemophilia and allied conditions (the purpuras, pernicious anemia, hemorrhagic nephritis), and on a new treatment for controlling the bleeding that occurs in these cases. In my letter to-day I shall endeavor to give you a summary of these very valuable researches, as well on account of the originality of Weil's work, as of the practical interest of his therapeutic proposals. Having myself twice passed through the prolonged anxiety of a case of Werlhoff's disease in young girls, I speak feelingly on the subject, knowing how thankful I should have been on those occasions to have had such a remedy as this at my disposal.

The reason why Weil has been able to carry the study of this difficult question an appreciable degree forward is that he is the first to have ventured to get his hemophilic blood for purposes of clinical investigation by direct tapping from a large vein with a needle. Heretofore anything of that sort with this class of bleeders would not have been thought permissible; but Weil has shown not only that it can be done with entire impunity, but that it is absolutely obligatory here, as well as in the purpuric conditions, to proceed in this manner, if satisfactory results are to be expected, since experimentation on the peripheral blood by the mere pricking of a finger does not supply a sufficient quantity, nor does the blood flow in its natural manner when thus drawn.

He has had occasion to study more or less thoroughly 11 cases of hemophilia, beside a number of purpura, acute and chronic, primitive and secondary, some of pernicious anemia, and some where hemorrhage occurred in nephritis; he thinks that these last are due to a distinct altered condition of the blood, and ought to be put in a class by themselves and separated from the other nephritic patients, with whom there is no tendency to hemorrhage.

The study of the state of the blood in these 11 cases has led him to the belief that the group hemophilia must be divided into two perfectly distinct parts: one in which the disorder seems to be a family, hereditary affair, passing down from generation to generation (though it may skip one, or even two or three), and affecting the males only and leaving the females immune, at least so far as the important accidents are concerned; and another in which it appears to be a spontaneous, acquired condition, though he admits that the latter division may be only a provisory one, on account of the great difficulty experienced in many cases in obtaining precise information about antecedents; of the second class he has seen 7 cases, of the former, 4.

Incidentally he calls attention to the fact that it is not always easy to separate pure hemophilia, characterized by abundant hemorrhages occurring apart from any dyscrasic or infectious morbid condition, after traumatism, and never spontaneously, from other hemorrhagic conditions in which similar losses of blood occur spontaneously; some hemophils may have inexplicable spontaneous hemorrhages; some chronic cases of purpura may bleed on traumatism. It is consequently difficult to draw the line closely between these two categories, and cases of transition are frequent.

And just as it is impossible to separate certain forms of chronic purpura from certain cases of acquired hemophilia, so is it equally difficult to separate some chronic cases of purpura from some cases of pernicious anemia. Here again the transition cases come in: the abundant hemorrhages of purpura may produce pernicious anemia, the latter following and being induced by the former; or, a toxic or infectious cause may produce at the same time hemolysis and disordered coagulation. Hemorrhage hastens the decrease in the number of blood globules, and the pernicious anemia and purpura are simultaneous, the disorder being named according to the predominance of the symptom anemia or of the symptom hemorrhage.

We have, then, here to deal with a complicated and still imperfectly understood group of conditions, to the unravelling of which it is hoped that Weil's researches will prove an important contribution.

Having examined the blood of these patients according to his method, Weil finds that in the *spontaneous, autogenous form* its characters are as follows:

When a needle is inserted into a vein at the elbow, the flow of blood is seen to be quite different from what it is with a normal person; whereas with the latter the blood comes drop by drop, soon slows up, and the needle blocks after three or four centimeters, with the former it flows on steadily, rapidly and for so long as you desire. In some cases after withdrawing 20 cc. the flow is still as unimpeded as at the beginning.

Morphologically the blood is normal, both in number and characters of globules, aqueous tenor of serum, osmotic pressure, alkalinity, cholemimetry and fibrinogen. The trouble lies in a disorder of the process of coagulation, the clot forming too slowly, and in a special, non-compact manner.

When the process of coagulation is closely watched it is observed to assume quite a peculiar mode, which Weil has called *plasmatic coagulation;* the reds separate from the plasma and fall to the bottom, where they form a layer,

the plasma remaining above, noncoagulated. Gradually this plasma thickens, jellifies, and coagulation begins at its free surface and edges and extends downwards. The white clot thus formed immobilizes the cruor, which then also coagulates. When this has taken place normal retraction begins, first of the white clot and afterwards of the red, followed by exudation of clear, normal serum. Then a curious phenomenon occurs: little by little a certain number of red globules separate from the red clot, and, slipping out from among the meshes of fibrin, fall to the bottom; forming ultimately a layer of microscopically intact globules separated from the clot above by a sheet of yellow, nonlacquered serum. This appears to be a further anomaly of coagulation, secondary to the plasmatic coagulation, as though an undue proportion of the fibrin had been retained in the white clot.

The other remarkable feature in the blood condition is *retarded coagulation*, which, during the periods of hemorrhage, takes twenty-five minutes, instead of from three to five, and, after hemorrhage has ceased, to slower still, seventy-five minutes in one case, and forty-five in another. Blood coming from a surface-cut ultimately forms clots *in situ*, but beneath these clots it continues to ooze out and will not stop flowing.

In vitro, the addition of *small* doses of calcium chloride to the blood hastens coagulation noticeably; but *large* doses always delay coagulation.

But the addition of a little human serum to the blood puts an end to the whole trouble, both plasmatic coagulation and retarded coagulation disappearing entirely.

Now the disordered coagulation must be due either to the presence in the blood of substances preventing coagulation, or to the absence of substances that favor it. Making the opposite experiment to the above, adding a little hemophilic serum to some normal blood, no disturbance of coagulation ensues; it is consequently manifest that in this form of hemophilia the trouble is an absence or alteration of substances that favor coagulation, and probably of the coagulating ferment, fibrin-ferment or thrombosis, and that alone, since the addition of a little normal serum corrects the defect altogether.

The serum of cattle, horses and rabbits has the same effect, but is less active than human serum. An excessive amount of serum acts just like large doses of calcium chloride, preventing coagulation.

Clinically it is found that the intravenous injection, in such cases, of 15 to 20 cc. of human serum transforms the pathological condition completely, and renders it normal both in form and time. Twenty-four hours after such an injection a hemophil of this class can undergo an operation with impunity, such as tooth-extraction, or incision of skin and deeper tissues. In a few weeks, however, coagulation has again a tendency to become abnormal in time, though not in mode.

So much for the spontaneous, acquired form of hemophilia; now for the *family, hereditary form*. Here the state of the blood is quite different.

With these patients the blood does *not* flow freely through the needle inserted into the vein, in fact the needle may block after 2 or 3 cc. have passed, though not with clotting, but because the viscosity of the blood is greater than the normal.

In vitro, plasmatic coagulation takes place, but far more slowy than in the spontaneous form, on account of the viscius blood. Coagulation requires anywhere from two to nine hours. The clot that results is abnormal in appearance, and brittle; the blood does not seem to be chamically normal. Fibrinogen is certainly modified quentitatively and qualitively. Microscopically the whites are very low, three to four thousand.

Calcium chloride in small doses improves the condition, as in the spontaneous form; it accelerates coagulation though without altering its mode. Human or animal serum, however, seems here hardly to have more effect than the calcium chloride; and when the serum of such patients is added to normal blood, it interferes with coagulation. Both of these particulars are in striking opposition to what was noted in the acquired form.

Clinically, though, an intravenous injection of human or animal serum has a favorable effect; its hastens coagulation, and ultimately modifies the abnormal mode of coagulation, though the latter never disappears altogether.

These facts concerning the blood condition in the two forms of hemophilia are of great importance as regards its pathogenesis and therapeusis. They introduce into the pathology of the blood the notion of disorders caused by mere functional disturbances. Since one of them is a hereditary complaint, it follows that the absence or anomaly of secretion may be a species of malformation; there are, therefore, functional as well as anatomical malformities.

The separation of hemophilia into these two groups is not only apparent experimentally but clinically.

In the spontaneous form the accidents are less marked, less frequent, and require a more severe trauma for their production; they are, therefore, generally separated from each other by long intervals, between which the patient's health is excellent.

In the hereditary form the tableau is quite different. The troubles begin as soon as the child leaves its mother's arms, every accident no matter how slight gives rise to hemorrhage and may endanger its life, visceral bleeding occurs, and hemarthrosis appears at any blow on a joint, or even after muscular contraction. The latter symptom is very frequent, and may, if the child lives to grow up, end in ankylosis and muscular atrophy.

Two new views that Weil has introduced into this part of the question are, (1) the difference in gravity between the two forms; (2) the close relation between the severity of the symptoms and the degree of the blood disorder: the greater the retard in coagulation, the more serious the case. In the family form it is found that the younger the patient the graver the symptoms, though this may depend on the fact that the worse cases die before they get very far in their career. It is, therefore, evident that blood examination with these patients is of prognostic value as well as diagnostic.

As regards the etiology of hemophilia, some writers have endeavored to incriminate the liver, hepatic disorder being one of the factors of hemorrhage in purpura. It follows that mere analogy might warrant our ascribing a certain action in hemophilia to either functional disturbances or lesions of the liver. But it is found that neither hepatic antecedents nor cholemic stigmata are constant in either group of hemophils. Still, several of Weil's cases did show manifest liver disease, and there can be no doubt that the liver acts on the blood and alters it by other, nonapparent mechanisms.

In view of the fact that physiologists do not yet agree as to the mode of coagulation of normal blood, it is evidently not an easy matter for us to attempt to explain its abnormalities. A physical act for some, chemical for others, normal coagulation occurs through the breaking up of an albumin of the plasma fibrinogen under the influence of a leucocytary ferment, the fibrin-ferment, or thrombosis, into a globulin which remains liquid in the serum, and into concrete fibrin which is precipitated, dragging together with its meshes the figured elements of the blood to form the clot. But the process is apparently more complex than this, since the plasma contains salts of lime, which play a two-fold part in coagulation toward which they are indispensable, transforming on the one hand into thrombosis the prothrombosis or zymogen of the leucocytes, *i. e.*, acting on the ferment; and, on the other hand, forming a combination with the fibrin, which is a calcic albumin. In addition to this, recent researches have shown that in the process of coagulation the rôle of the ferment is an associated one, and that it can only act in the presence of another substance, called kinasis, which appetizes the fibrinogen which the ferment is intended to split up.

However these facts may be, in acquired hemophilia the pathological modification seems to be nothing more than an absence or alteration or the kinasis, the blood being normal both morphologically and chemically.

In the hereditary form, on the contrary, the process is a more intricate one. There appear to be present in the blood substances that oppose coagulation, since on mixing hemophilic serum with normal blood, coagulation is retarded.

Turning now to the practical side of the question, the therapeutic results obtained, Weil stated at the recent French Congress of Medicine (October, 1907) that in his 11 cases spaced over a period of two years, the injections

of serum have constantly proved successful in controlling hemorrhage. But of this more anon.

Leaving now hemophilia for the moment, and taking up its allied conditions, we find the blood disturbances in them to be analogous though not identical to those mentioned above. Looking at the various forms of purpura in particular, we there have plasmatic coagulation, delayed coagulation, a clot that does not retract, and an absence of exudation of serum. These disturbances are lessened *in vitro*, by the addition of small doses of serum, or of calcium chloride. Intravenous injection of serum is followed by amelioration, but not by disappearance of the blood disorder.

In acute purpura, primary or secondary, the injection has a manifest curative effect. In two of Weil's cases the hemorrhage was definitely checked and recovery hastened; in a third the hemorrhage decreased considerably; in a fourth the loss of blood ceased, but the patient succumbed to intoxication through hepatic insufficiency.

In two cases of chronic purpura the result was satisfactory, *quoad hemorrhage*, which was also the case with two patients with mixed forms of chronic purpura and pernicious anemia.

The general conclusion to be drawn from the above facts is that in all these different cases this means has proved to be an efficacious one, more so even than calcium chloride. Its action is not dissimilar to that of this salt. The salts of lime, which form a substratum to the ferments of coagulation, intensify the action of the thrombosis, that seems damaged or deficient in hemorrhagic conditions. The injections of fresh blood serum introduce directly into the circulation the ferments of coagulation, and very likely stimulate the system to produce others as well.

When a toxic cause is present in the blood, and continues to act, the check of hemorrhage may only be temporary; or, even though entire, the evolution of the underlying disorder may continue to a fatal termination, the injection modifying the symptoms only, not the disease.

MODUS FACIENDI.

The treatment is the same in all of these different groups, of whatever origin or form.

Any *fresh* blood serum can be used. Human serum is preferable, but that of the horse or rabbit will do also. Cattle serum should not be used, as it has been found to produce accidents: short but violent rises of temperature, with rigors, yawning, emesis, cyanosis and lumbar pain. At a pinch any fresh antitoxic serum would serve, but plain serum is best.

The technic is that of all antitoxic injections, — 20 cc. subcutaneously or intravenously.

The method is applicable either as a *preventive*, the day before a contemplated operation; once in a while, at long intervals, to anticipate symptoms of more or less regular occurrence; or as a *curative*, during the hemorrhagic stage of any of these disorders.

Its effect begins at the end of twelve to twenty-four hours, and lasts from one to three months. Its action is not only a general one, but local as well; consequently it is eminently adaptable to external lesions with these patients: a cut during shaving, tooth extraction, or epistaxis.

Weil long thought that the effect of these injections was only palliative; but he now sees that he was mistaken, and that they really modify the humoral disorder of hemophilia. In the case of a patient with the hereditary form, subject for years to serious hemorrhages every month, there has been no spontaneous recurrence of the symptom now for a year, thanks to a preventive injection once in three months. And the blood lesion has been found to decrease in proportion. But the patient still has a tendency to prolonged bleeding if exposed to any slight trauma, some time after an injection. From a serious form consequently these injections have transformed this patient's case into a mild one.

"SPECTATOR."

P. S. I wish to correct an error that appeared in my recent letter on Chantemesse's treatment of typhoid fever. The statistical figures there given, 712 cases with 27 deaths, were up to 1906, and not 1904. Later figures still reported at the recent Berlin Congress, September, 1907, 1,000 cases with 47 deaths, 4+% on a nearly seven years run of ordinary hospital cases, constitute unquestionably a very remarkable showing, in which time and numbers would appear to eliminate altogether the effect of chance or of a lucky series.

THE TREATMENT OF TYPHOID FEVER BY SPECIFIC SERA AND STATISTICAL METHODS OF RESEARCH.

BOSTON, Nov. 8, 1907.

Mr. Editor: The results obtained by Dr. Mark W. Richardson in his very interesting experiments with specific sera in the treatment of typhoid fever,[1] suggest the question how far the doctrine of chances may have affected his percentages. The groups of cases utilized by Dr. Richardson for comparison of results of treatment by the different sera, as among themselves and with "routine" treatment, would seem at first to be quite large, varying from 21 to 74 cases in each group, sufficiently so not to be seriously affected by chance, and yet the difference in the percentages obtained may have been wholly due to chance; or if the size of the groups had been larger Dr. Richardson's results might well have been more favorable to one or the other of the sera — or the reverse.

In 74 cases treated by routine treatment the deaths were 9.4%.

In 35 cases treated with serum the deaths were 5.7%.

In 74 cases treated with filtrates the deaths were 14.8%.

In 21 cases treated with residue the deaths were 9.5%.

I may here recall a series of observations which I made for the purpose of determining the effect of chance on mortality statistics of typhoid fever and the number of cases required to eliminate this effect (the paper was published in the JOURNAL, Oct. 15, 1895). About 3,000 cases treated by "routine" methods at the Boston City Hospital were taken for analysis and divided into groups of different sizes ranging from 50 to 1,500 cases each. The groups were made up of consecutive cases as they were admitted, without selection.

It was found that when these 3,000 cases were divided into groups of 50 consecutive cases the mortality varied from 24% to 2%, or 22%, and in groups of 100 from 19% to 6%, or 13%. It was not till groups of 700 cases each were taken that this difference was reduced to 3.5%.

In groups of 1,500 cases the difference was still 2.4%. The following table gives a summary of the results:

Groups of cases.	Highest per cent of deaths in each group.	Lowest per cent.	Differences per cent.
50	24	2	22
100	19	6	13
200	17.5	8.5	9
300	17.6	10.6	7
400	17	10.7	6.3
500	17.4	10.8	6.6
600	15.5	10.6	4.9
700	14.2	10.7	3.5
800	14.6	11.2	3.4
900	14.3	10.8	3.5
1,000	14.1	11.5	2.6
1,500	14.1	11.7	2.4

The bearing of these figures upon the results of treatment by specific methods as compared with "routine" methods seems to me to be obvious. Statistical comparisons can only give logical results. When the conditions are exactly the same in all the members of the series compared, excepting in that factor the effect of which is to be determined. But the conditions in different cases of typhoid fever never are the same. No two cases ever are even approximately alike. If they were *exactly* alike, two cases would be sufficient to prove results. Hence the necessity of taking a very large number of cases in *statistical* inquiries on the theory that in very large groups there will on the average be the same number of individual differences in each, and the conditions will average the same.

Very truly yours,

MORTON PRINCE, M.D.

[1] BOST. MED. AND SURG. JOUR., Oct. 3, 1907, p. 449.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 2, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	1	—
Chicago	—	—	Waltham	10	2
Philadelphia	—	—	Pittsfield	8	1
St. Louis	—	—	Gloucester	—	—
Baltimore	162	44	Brookline	4	—
Cleveland	—	—	North Adams	3	1
Buffalo	—	—	Chicopee	8	3
Pittsburg	—	—	Northampton	9	2
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	5	—
Washington	—	—	Leominster	2	1
Providence	82	22	Hyde Park	5	1
Boston	244	59	Melrose	2	0
Worcester	43	5	Newburyport	—	—
Fall River	51	24	Woburn	5	0
Cambridge	14	3	Marlboro	3	0
Lowell	28	8	Westfield	4	0
Lynn	25	11	Peabody	—	—
New Bedford	25	1	Revere	4	1
Springfield	27	8	Attleboro	2	1
Lawrence	26	9	Clinton	4	2
Somerville	14	3	Adams	1	1
Holyoke	21	2	Gardner	0	—
Brockton	9	2	Milford	2	—
Malden	11	3	Watertown	1	0
Chelsea	10	4	Plymouth	—	—
Salem	21	4	Weymouth	3	0
Newton	12	5	Framingham	—	—
Haverhill	3	1	Southbridge	6	—
Fitchburg	18	4	Wakefield	—	—
Everett	10	1	Webster	—	—
Taunton	—	—			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOV. 9, 1907.

C. P. BAGG, surgeon. Detached from Naval Medical School, Washington, D. C., and ordered to the "Philadelphia" Dec. 7.

SOCIETY NOTICES.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.— The regular meeting of this society will be held at the Boston City Hospital, on Friday evening, Nov. 15, 1907, at 8 P. M. Papers: Dr. Francis P. Emerson, Diseased Conditions of Rosenmüller's Fossæ in their effect upon the Middle Ear. Discussion to be opened by Dr. Geo. A. Leland. Dr. Geo. H. Powers, Jr., report of a Case of Caries of the Middle Ear, Mastoid and Internal Ear, with Extradural Abscess, Pachymeningitis, and Destruction of the Semicircular Canals. Discussion to be opened by Dr. E. A. Crockett.

PHILIP HAMMOND, M.D.,
Secretary.

BOSTON ASSOCIATION FOR THE RELIEF AND CONTROL OF TUBERCULOSIS.— The attention of all members of the Boston Association for the Relief and Control of Tuberculosis is respectfully called to the annual meeting to be held on Tuesday, Nov. 19, at 4.30 P. M., in the Twentieth Century Club, at 3 Joy Street. The reports for the year will be received and officers for the ensuing year elected, in addition to any other business which may properly be brought forward.

MARY MORTON KEHEW,
Clerk.

RECENT DEATHS.

FRANKLIN BONNEY, M.D., M.D.S.S., of Hadley, died Nov. 9, 1907, aged eighty-eight years.

ARTHUR HARRIS COWDREY, M.D., M.M.S.S., died in Stoneham, Nov. 4, 1907, aged seventy-one years.

ROBERT DISBROW, M.D., M.M.S.S., died in Boston, Nov. 9, 1907, aged sixty-five years.

DR. ABEL HUNTINGTON, formerly of East Hampton, died at Islip, Long Island, N. Y., on Nov. 6.

DR. A. J. BROWER, a retired physician of Utica, N. Y., died at Saranac Lake, in the Adirondack Mountains, on Nov. 8, at the age of sixty-seven years. He was graduated from the medical department of the University of the City of New York in 1861.

DR. EDMOND HOWARD MARTIN, a retired Southern physician, died at the residence of his son-in-law, Dr. J. Harvie Dew, in New York, on Nov. 3, at the age of eighty-two years. Dr. Martin, who was a descendant of Chief Justice Marshall, of Virginia, was born in Beaufort district, Georgia, and practised in Savannah until after the Civil War. Later he removed to New Orleans, where he continued to practise until his retirement a few years ago. He then came to New York to make his home with his children, two of whom beside Mrs. Dew reside in that city.

DR. CAMPBELL COLWELL FITE, a retired physician, died in New York, after a long illness, on Nov. 9. He was born near Shelbyville, Tenn., on July 29, 1855, and was educated at the Dixon Academy, Shelbyville, and Cumberland University, at Lebanon, Tenn. He studied medicine with his step-father, Dr. R. F. Evans, and was graduated from the Louisville (Ky.), Medical College. In 1882, when but twenty-seven, he was elected Secretary and Executive Officer of the Tennessee State Board of Health, and while in this position he organized the bureau of vital statistics of that state. For several years he practised with much success in Nashville, and in 1885 was appointed assistant superintendent of the East Tennessee Hospital for the Insane, at Knoxville. In 1890 Dr. Fite removed to New York and went into commercial life, organizing the Malt-Diastase Company for the manufacture of malt products, but after some years, his health failing, he retired from business. During his career he was the author of numerous medical and scientific papers.

BOOKS AND PAMPHLETS RECEIVED.

Der Abstinentismus und seine Bedeutung für das Individuum und für die Gesellschaft. Von Dr. Gustav Kabrhel. München und Berlin: R. Oldenbourg. 1907.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D. Eighth edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

A Text-Book of Pathology. With an Introductory Section on Post-Mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., and T. Mitchell Prudden, M.D., LL.D. Eighth edition. Illustrated. New York: William Wood & Co. 1907.

Treatise on Diseases of the Skin. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D. Fifth edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Handbook of Cutaneous Therapeutics. By W. A. Hardaway, M.D., LL.D., and Joseph Grindon, Ph. B., M.D. Philadelphia and New York: Lea Brothers & Co. 1907.

Intestinal Perforation in Typhoid Fever; Its Diagnosis and Surgical Treatment. By J. E. Allaben, M.D. Reprint.

Standard Oil. By Harold J. Howland. Reprint.

The Perpetual Visiting and Pocket Reference Book, Including Information in Emergencies from Standard Authors. St. Louis: J. H. Chambers & Co.

The Operating Room and the Patient. By Russell S. Fowler, M.D. Second edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Principles and Practice of Modern Otology. By John F. Barnhill, M.D., and Ernest de Wolfe Wales, B.S., M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

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Original Articles.

DELIRIUM AND DELIRIOUS STATES.

BY HENRY M. SWIFT, M.D., BOSTON,
Formerly Assistant Physician, Danvers Insane Hospital; Assistant Visiting Neurologist, Long Island Hospital, Boston.

DELIRIUM may occur under various conditions. Its causes are numerous and sometimes obscure, while its manifestations vary and are often atypical. The recognition of delirium is important because, when its presence is determined, the attention of the physician is turned toward the search for some cause, which, if found, may furnish suggestions for treatment.

If seen in the course of an acute infectious disease, as typhoid fever or pneumonia, the recognition of a delirium is attended with no difficulty, its occurrence here being so common, its manifestations usually so typical and its cause perfectly evident. When, however, it occurs under certain other conditions, when its clinical picture departs more or less from the type, and when no cause is immediately evident, then its recognition may not be so much a matter of course, unless a clear conception of its essential nature is possessed by the physician.

It is the purpose of this paper to describe the mental state seen in delirium; to illustrate this by a report of a few cases,[1] showing various modifications, and to consider briefly some of its causal factors.

In all delirious states we find disturbance of consciousness, with lessened power of attention, comprehension and memory, with resulting disorientation. Motor unrest and hallucinatory disturbance are usually present, but in varying degree, sometimes so marked as to predominate the whole picture, sometimes slight.

I shall begin with an attempt at a description of delirium in general, some of the psychology of which I take from Kraepelin.[2]

The fundamental attribute of most deliriums at least is apparently a disturbance of consciousness.

Consciousness is a term of which it is difficult to give an adequate definition. Following Kraepelin's description we may say that consciousness is that condition of mind under which external stimuli produce cerebral changes of some sort, of which the subject immediately becomes cognizant and is accustomed to regard as ideas, feelings, impulses, etc.[2] When, however, owing to some noxious influence, such as a toxemia, this faculty of mind is interfered with, consciousness becomes clouded.

This faculty of recognition of external stimuli may be completely abolished as in coma, or the interference may be only partial.

In delirium this faculty is usually not completely abolished, but here only the stronger external stimuli are heeded, while the rest tend to pass unnoticed; so that even at best the patient gets only an incomplete understanding of his surroundings and of what is taking place around him; and this because the impressions made by even such stimuli as reach him are only fleeting, no association between them and memories of previous experience being possible. Thus impressions tend to remain simply impressions and are without meaning.

Closely associated with this disturbance of consciousness are disturbances of attention and comprehension. Upon examination of the patient we find that his attention is gained only after more or less effort on the part of the examiner, or, if the disturbance is very profound, perhaps not at all. If we speak to him in a natural tone of voice, he frequently does not understand, — perhaps takes no notice. If, however, we repeat our question in a more insistent manner, the attention may perhaps be gained for a moment and a relevant answer given, the condition thus resembling a state of extreme normal fatigue, or that of a person on the verge of sleep. Yet any approach to a connected train of thought is lacking; but instead, the patient may give utterance to a string of disconnected talk which sometimes descends to unintelligible muttering, showing that associated with the diminished reaction to stimuli coming from without is an increased reaction to stimuli arising from within.

On account of these disturbances no concentration is possible, and all ability for mental work is in abeyance. This may be often brought out by asking the patient to solve an arithmetical problem. Often a simple addition like $7 + 8$, which is dependent only on past memories, may be correctly answered; whereas a slightly more complicated one like $17 + 25$, which would necessitate a certain mental effort, involving something more than memory alone, will not usually be solved.

Owing to these disturbances of attention and comprehension, whereby impressions are isolated and fleeting, there results an extreme memory disturbance, particularly for recent happenings. Thus, delirious patients have no idea as to the length of time they have been in a given place, and in fact can recall little or nothing of what has taken place since they have been ill. But in regard to events which have happened before their illness the case is somewhat different, and if the disturbances of attention do not act as a bar, many detached facts relating to the previous life history are correctly given.

Most striking is this difference in delirium tremens, in which condition sometimes a fairly complete history previous to the present illness may be obtained from the patient, in surprising contrast to his deficiency in recalling happenings from hour to hour.

Owing to the lack of correct appreciation of surroundings, disorientation — at least at the height of a delirium — is always present. Patients do not know where they are. Sometimes, indeed, after being repeatedly told, they may remember for a time the name of a place, but this remains for them only a name and is devoid of any real significance. Frequently their ideas in

[1] These were all Danvers Insane Hospital cases which Dr. C. W. Page kindly allows me to report.
[2] Kraepelin: Psychiat., 7th ed., vol. I, p. 155 and following.

regard to place may vary from time to time; thus at one time they may say they are in a hospital; at another, that they are at home or somewhere else.

In nearly all deliriums are present, at some time, motor unrest and hallucinations, which are often so pronounced as to predominate the whole picture and to throw into the background the manifestations above described; yet, perhaps, for some reasons they cannot be regarded as so essential and generally diagnostic as the characteristic combination of clouding of consciousness and associated disturbances of attention, comprehension, memory, etc.; first, because in atypical cases they may be absent, or at least present in only a slight degree; secondly, because they are found to some extent in many other psychoses.

The clouding of consciousness and associated disturbances of attention, memory, etc., are present not only in all forms of delirium and allied states, but also, in traces at least, throughout the whole course of a given delirium even at the onset and during the period immediately preceding recovery, at which extremes the more striking symptoms — motor unrest and hallucinatory disturbance — may be scarcely manifest.

I dwell on this, not on theoretical grounds, but because I believe it to be a point of practical diagnostic value.

I shall now pass on to the consideration of some of the various forms and modifications of delirium as illustrative of the descriptions given above.

FEVER DELIRIUM.

This condition is well known and requires no lengthy description. There is clouding of consciousness, which is greater or less according to the severity of the case. Disorientation soon appears. The attention can be gained but momentarily; or, as the clouding of consciousness deepens and a state of stupor is approached, not at all. The patient does not appreciate what goes on about him and friends may not be recognized. Hallucinations begin to recur in rapid succession, and lastly — and it is these which give the picture its most salient feature — are the disconnected train of talk to which the patient gives utterance and the motor unrest. The speech usually becomes indistinct and may amount to merely a series of mutterings of which the import is unintelligible.

The motor unrest varies from slight movements of the arms and fingers — carphologia, subsultus — to more considerable disturbances, in which the patient may throw off the bed clothing, and if not prevented, get up and wander about. Often these acts appear to be of the nature of reactions to hallucinations.

Fever delirium, being the best known, may be taken as the type. In some of the following descriptions of cases of delirium from other causes, we shall see how they depart in certain respects from this type, yet bear a fundamental resemblance to it. The resemblance consists in the fact that the disturbances of consciousness, attention, disorientation, etc., and usually motor unrest and hallucinations are present in all. They differ from one another in that these various manifestations are differently combined, sometimes one, sometimes another, predominating, thus giving the pictures their distinctive marks.

DELIRIUM TREMENS.

Delirium tremens, as differing from other forms of delirium, is characterized by the extraordinary vividness of the hallucinations, by extreme motor restlessness, by a general tremor approaching a sort of ataxia, and by disorientation, associated with relatively slight disturbance of consciousness.

The hallucinations are chiefly visual and recur with great frequency. Animals, such as dogs, rats, etc., are in the room; pictures are seen upon the wall, or the patient may fancy he is to be attacked in various ways.

Instead of the purposeless carphologia of the febrile delirium, the actions are rather of purposeful character, and the patient may busy himself in performing various acts, or live over again the scenes of his accustomed daily life; all this being, in large measure, a reaction to the hallucinatory episodes through which he is constantly passing. The movements are performed actively, but accompanied by the characteristic coarse tremulousness or ataxia.

Most interesting is the association of complete disorientation with relatively clear consciousness. While not knowing where he is, nor appreciating at all the nature of his surroundings, the patient is yet usually capable of answering questions in a relevant manner, and his conversation does not show that incoherence generally seen in other forms of delirium, although indeed the attention cannot be long held on one thing, being constantly distracted by the ever recurring hallucinations.

Another interesting feature, which is, however, to some extent present in all deliriums, is the disproportion between the memory disturbances for recent and remote events. Patients, while unable to recall what has happened a few minutes before, may yet be in a condition to give quite a little of their previous life histories.

The comprehension, too, is less affected than in other forms, so that patients understand more easily what is said to them, and as has been already mentioned, answer relevantly, — all this rendering a certain amount of rational conversation possible.

Allied to delirium tremens is alcoholic hallucinosis, but differing from it in that the hallucinations are chiefly auditory, and not accompanied by any considerable disturbance of consciousness or by disorientation. Between the two conditions are intergrading forms.

In alcoholic conditions the disturbance of consciousness may become deeper than in ordinary delirium tremens and the hallucinatory unrest less violent, as in the following case:

Male, forty-seven. Danvers Insane Hospital.

Onset ten days before admission, following a spree. Became confused, picked things to pieces and threw

them about. Slept at times, but at other times got out of bed and wandered around his room. Not noisy. *Never appeared to see or hear imaginary things.* History of a long continued alcoholic excess.

Examination. — Sept. 2. Lies in bed turning head from side to side. Later threw off bed clothing and tried to get up. Then sat for a while on the edge of the bed, muttering.

Apparently deep disturbance of comprehension, and does not seem to notice anything which happens about him. Hard to attract his attention, yet when questions are repeated he gives an occasional relevant reply and understands enough to obey a simple direction. When shown objects names intelligibly only "handkerchief." At no time has there been evidence of hallucinations.

Emotional tone indifferent. Untidy. Speech thick, suggesting paresis of tongue or throat muscles. Gait unsteady. Moderate tremor of tongue and hands.

Sept. 6. Weaker. More restless.

Sept. 9. Less restless. Speech largely inarticulate. Does not appear to recognize persons nor even familiar objects.

Sept. 16. Considerable improvement, both mental and physical. Speech is plainer — answers simple questions relevantly. *While he remembers he was in Danvers Insane Hospital twelve years ago, he does not realize that he is there now.*

Quiet. Habits now neat.

Sept. 22. Has become oriented for place, but not for time. Memory clear for past events, but does not know how long he has been in the hospital. Good insight. Appreciates he has been out of his head and that drink was the cause of his trouble.

A month later discharged; talk and conduct normal. Good insight. Memory hazy only for period of illness.

This case differs from ordinary delirium tremens in that the disturbances of consciousness were deeper, in that the motor unrest was less turbulent, and in that hallucinations, if present, were not demonstrable. Furthermore, the duration was longer than that of ordinary delirium tremens, the attack lasting several weeks instead of several days. Yet with the exception of hallucinations, all the characteristic disturbances of delirium were present and the diagnosis "Delirium" was justified.

In some respects the case resembled the type of the asthenic delirium seen in exhaustion conditions, and perhaps a poor physical condition may have been one causal factor, yet the psychosis occurred in a person of alcoholic habits, and the tremors and peculiar speech affection suggesting an accentuated form of the talk of a drunken man were typically alcoholic.

The following case of alcoholic delirium differs from the above in that hallucinations were prominent, in that it was associated with a polyneuritis, in that its course was much longer, and in that the outcome was not recovery but emergence into a state characterized by a peculiar memory disturbance, which is known as "Korsakoff's psychosis." The notes on this case were made by Dr. H. W. Mitchel, with whose kind permission I give a short abstract:

Male, thirty. Danvers Insane Hospital.

Alcoholic habits.

Onset gradual, four to six weeks before admission. Talked excitedly; saw bugs, also people coming and going through the window. Symptoms intermitted at times when he would appear all right, then would recur. Slept poorly. Restless.

Dec. 18. In state of hallucinatory excitement; deep clouding of consciousness; inaccessible and hard to gain his attention, being constantly distracted by hallucinations. Fights the bed clothing; struggles when attempts are made to care for him. When physicians approach, shouts, "Get away, get away," and says something about a woman being behind him. Picks imaginary insects from face and blows them off his fingers.

Occasional relevant answers, but attention could not be held, being replaced by a spontaneous flow of disconnected sentences: "The stuff is boiling out. Have you made that, Kelly? [Points to ceiling.] Raise it up again, raise it up. Put it back the way they were. I'm going to clean up the stairs. Here, wait a minute. No, don't blow my brains out. Keep the lights a-going, boys. No, that's a bluff. Here, go ahead with the machine," etc.

Physical examination showed the presence of a polyneuritis.

Dec. 19. Constantly hallucinated, picking at bed clothing. Impossible to keep attention long in conversation.

Question. What did you do last night?

Answer. Well, I couldn't tell.

Q. Where were you? [No answer, but gazes fixedly at ceiling without reply.]

Dec. 27. Condition unchanged. Difficult to gain his attention. Questions have to be repeated before getting a reply.

Q. What is this place?

A. Hospital and prison; oh, they are burning me alive out there. [Shudders and groans, then turns and gazes furtively about the room.]

Jan. 1. Inaccessible to questioning. Only spontaneous disconnected talk with pauses in which he looks about him or at ceiling. *Speech has become thick* and almost inarticulate.

Jan. 29. Improvement. Less noisy. Questions now answered relevantly, but memory defect for immediate happenings. He came here last night, a whole gang of fellows came with him. To-day he was out walking with a whole gang of fellows. Disoriented, no grasp on surroundings.

March 7. Improvement in physical condition, but still noisy, talking and shouting. Strong enough to get out of bed, but walks with a feeble steppage gait.

June 12. Quiet; disoriented; *memory disturbance* and *fabulation*. Steppage gait. Movements show considerable degree of inco-ordination.

This brief abstract shows how, as the case progressed, the clouding of consciousness, disturbance of attention and the hallucinatory unrest gradually became less while the disorientation and memory disturbance persisted, the end result being a Korsakoff's psychosis.

The following is a case of bromide delirium occurring in an attack of manic depressive insanity (recurrent mania):

Woman, twenty-four. Danvers Insane Hospital.

History of six previous maniacal attacks. At the onset of the present attack she had been given large quantities of bromide at home, in the hope of aborting the attack.

On admission — stuporous. Physical condition weak, so that she had to be carried to the ward.

After admission, usually restless, so that constant attention is required to keep her in bed, but at times sleeps a little. Tendency to throw off bed clothing

and clutch at foot of bed. If allowed to get up she wanders weakly about, but soon falls. *Speech thick;* much is unintelligible. *Drools.* Disoriented. Said at one time she was in a hospital, but different places at different times; yet recognized nurse whom she had known at earlier commitment, and finally, after being asked several times, gave physician's name correctly. Generally difficult to arouse her from her stupor and to gain her attention so that she will answer questions.

After a month, consciousness became clearer and she began to have a better understanding of her surroundings. Before this she would sometimes suddenly emerge from an apparent stupor and throw things about and knock over chairs. Then hallucinated at times and apprehensive. Told nurse that somebody was about with a dagger trying to kill her. Her physical condition improved. Later the hallucinations and apprehensiveness faded out and she gradually became exhilarated, noisy, playful and her conversation flighty, her mental condition now being like that of her previous maniacal attacks.

This case is interesting as showing a psychosis within a psychosis. At the beginning, the stuporous condition was predominant, the clouding of consciousness being deep, and the attention and comprehension correspondingly affected. From the first, the restlessness gradually became more violent as the maniacal state was approached. Hallucinations, at first not evident, later made their appearance, and then when the maniacal state became fully developed, again disappeared.

Characteristic for bromidism was the drooling and thick speech, the latter of which, however, as we have seen, is also sometimes met with in alcoholic conditions.

The next case to be described is one of senile delirium, the condition, however, being perhaps in part dependent upon chronic exhaustive physical disease; also, possibly, on alcohol.

Woman, aged sixty-six. Danvers Insane Hospital. Practically no history obtained, except that the patient had previously been alcoholic, and that the onset of the psychosis was gradual.

Examination. — Generally poor physical condition. Arteries generally thickened and tortuous. Heart sounds rather sharp. Restless. Walks feebly — would fall if not prevented. Deep disturbance of consciousness. No grasp on surroundings. Talks incoherently; occasional relevant answer, but attention cannot be held and she immediately wanders, distracted, perhaps by visual hallucination or ideas arising from within.

Q. Where are you?

A. I don't know — I don't know that at all. [Looks about her.] Oh, there, he has got my watch away now. I wish you would send my dinner over. He kept me from getting my meals. [Picks at folds of the bed clothing.]

Q. What are you looking for?

A. Something was put down at my side last night.

Q. Have you lost anything?

A. Yes, the cat — see over there [then mutters unintelligibly]. Such a place as he left me; he tore my clothes and didn't leave a stitch to put on me.

Marked impairment of comprehension. Frequently questions not heeded or answer is irrelevant. When relevant answer is given it is usually only after several repetitions of the question. Names correctly a few familiar objects; at other times cannot be made to understand what is wanted. Obeys a few simple directions, like picking up a pin, etc.

Memory. — Completely absent for present happenings, but recalls a few isolated facts from life history. Gives father's name, — father and mother are both dead; lost her eye in a mill; has been in this country thirty years.

Frequent visual hallucinations. Gets up and looks under bed as if hearing something. Looks at other patients and smiles. Peers around. Looks at walls as if seeing something there.

Considerable motor restlessness, getting out of bed, etc., apparently due to reaction to hallucinations.

A week later became quieter. Disturbance of comprehension as before, but less distracted by hallucinations which are now not so prominent.

Gradual failure and, after two months, death from terminal pneumonia.

At autopsy, performed by Dr. Southard, beside various senile changes and a lobar pneumonia was found an undiagnosed cancer of the stomach.

This case differed from a simple senile dementia in that the disturbance of consciousness was much more extreme; also in the great motor restlessness and, at times, almost constant hallucinations. In ordinary senile dementia, disorientation, lack of appreciation of surroundings, memory defect, and frequently a degree of motor unrest are present. The consciousness, however, remains relatively clear, the patient understands what is said and the attention can be held without particular difficulty, although, of course, the capacity for mental work is low.

The practical importance of the distinction is that a delirious condition as such may improve and pass into a comparatively comfortable state of quiet dementia. That this did not occur in the present case was probably due to the presence of a chronic exhaustive disease.

The following case I considered to be one of delirium dependent upon organic cardiac disease in a patient with tabes:

Woman, fifty-six. Danvers Insane Hospital.

History incomplete. Had been in bad health for several years. Treated seven months in a general hospital, where she had "several attacks of insanity." One week before admission to Danvers, very active mental disturbance, — said it was snowing and wanted windows closed to keep it out. Stared vacantly. Did not recognize anybody.

Examination. — July 4. Color pale with lemonish tinge. Heart enlarged, action weak and irregular — 112 — pulse slower than heart, systolic murmur at apex. Lungs, numerous râles at bases. Liver extends 2″ below costal margin. Urine that of passive congestion. General edema. Hgb. = 80.

Pupils stiff to light. Knee jerks absent.

Mental. — At admission somewhat stuporous. Quiet at first, later became noisy. Resistive at times. Answered a few questions relevantly, but attention soon flagged and difficult to gain it again. Seems to make no effort to think; memory very defective for recent happenings. When asked how long she had been here, said, "Twenty-six, twenty-six, twenty-six; oh, dear me, suz! twenty-six, twenty-six, no, twenty-six; that is all I know is twenty-six, twenty-six: oh, dear, I wish I knew." No definite delusions, but refused milk, saying it was poisoned; but later drank two glasses after a little coaxing.

July 26. Slight improvement. Generally quiet and not so resistive. Not oriented, but answers questions better. Tells her name, but says she is twenty years old. Rather distractible. When paper rattles or nurse whispers, she is startled. Recognizes she is in a hospital, but does not know where.

Q. Have you been out of your mind?

A. I guess I must have been.

$2 + 2 = 4$, $6 \times 9 = 54$, $29 + 36$, unable to tell. Counts correctly to ten. At times hallucinated. Heard some one say she would be murdered; a snake had crawled into her bed; saw a man come into the room with a snake.

Aug. 1. Physical condition better. Talks rationally. Appreciative of what is done for her. Realizes that she has been out of her mind. Names President and king of England; also capital of Massachusetts and of United States. Memory — 2–9–4–7 correctly recalled after thirty seconds' pause. Appreciates the gravity of her condition. Does not believe she can get well, and hopes she will have an easy death.

Aug. 11. Comfortable, oriented, no active mental disturbance except rarely a hallucination.

Sept. 1. Physically not as well. Edema has increased. Mentally clear, no hallucinatory episodes. Gives fair account of previous life history, with a few discrepancies, but does not remember what took place at the general hospital a few days before her admission here. Oriented, giving date and day of week. Slight sensory disturbance over region of breasts.

Sept. 29. Has gradually failed. Of late has shown some confusion and occasional apprehensiveness with hallucinations. Edema of legs extreme. Ascites. Bubbling râles throughout chest. Pulse irregular and feeble. Dyspnea. Death.

The diagnosis " delirium " might be questioned; some, perhaps, preferring to regard the mental symptoms, associated as they were with stiff pupils and absent knee jerks, as manifestations of a general paralysis. Yet characteristic symptoms of general paralysis, as ataxic speech, lack of insight and evidence of extreme deterioration, were absent. Instead of these we find at times a combination of symptoms which characterize a delirium, namely, disturbances of attention and comprehension, the whole picture suggesting less a dementia than mental fatigue and inability to think, which later largely disappeared. Hallucinations and motor unrest are met with also in general paralysis, but are not usually of so transitory a nature as in this case. But most out of harmony with general paralysis was the reasonableness of the general manner and conduct after the mental confusion had passed.

A study of the cortex might have been helpful, but unfortunately, autopsy was refused.

I have further, among my cases, one of an atypical delirious condition, with deep disturbance of consciousness, but without hallucinations or considerable motor unrest, beginning soon after childbirth. The condition was apparently dependent (in part, at least) upon an obscure physical disease. As this case was very obscure I will omit a detailed description.

CAUSES OF DELIRIUM.

The nature of the psychosis should be, if possible, determined by an examination of the existing mental state. If the diagnosis of delirium can thus be established, a cause should be diligently sought. It is preferable that the procedure be in this order: first, diagnosis of condition, then search for a cause. For, to assume without analysis of the present condition, that a psychosis is a delirium merely because some possible cause of delirium happens to be present in the history may be misleading, as in differently susceptible individuals similar agents do not always produce similar effects; and many psychoses occur independently of any known cause.

I shall now consider briefly some of the causes of delirium. In this enumeration, however, I lay no claim to completeness.

Most common are acute infectious diseases as in typhoid fever, pneumonia and septicemia. In these the delirium may be due in part to toxemia, in part to pyrexia. Kraepelin makes mention of such conditions as the delirium seen in influenza without high temperature and the violent, initial delirium of typhoid, as being presumably dependent upon toxemia alone. The delirium sometimes associated with chorea, he is also inclined to regard as due to an infectious agent.

Delirium may also be met with associated with disorders of metabolism as in uremia.

Of drugs which may be mentioned in addition to alcohol, are the bromides, salicylates, chloral, morphine and cocaine. A case of chloral delirium resembling delirium tremens has recently been reported by Dr. H. W. Mitchel.[3]

Next in importance are various conditions of exhaustion as factors in producing a delirium, as when it arises or continues after defervescence in acute febrile disease. Or it may arise during chronic wasting conditions, or after loss of blood. The delirious states following childbirth may be due either to exhaustion or to toxemia, or sometimes to a combination of both. When occurring in cardiac insufficiency, it might be ascribed either to exhaustion or perhaps to cerebral anemia.

Kraepelin separates the exhaustive and toxic deliriums, believing that in some cases at least the difference in symptoms is sufficient to justify distinct groupings.

In many cases the disturbance cannot be assigned to any one cause, but seems to be due rather to a combination of factors, as pyrexia and toxemia in acute febrile disease, or childbirth and exhaustive disease as in our last case. Or, as in another of our cases, to senility, alcohol and exhaustion.

Occasionally a delirium may arise for which, in spite of the most diligent search, no cause can be discovered.

DIFFERENTIAL DIAGNOSIS.

When a delirium is atypical, its diagnosis may be difficult. In general it may be said that it should be made on the presence of the characteristic mental symptoms.

From general paralysis it is to be differentiated by the absence of ataxic speech and other physical signs, and by the indication of mere abey-

[3] Chloral Delirium: A Case Report. Bost. Med. and Surg. Jour., Jan. 31, 1907.

ance of mental functions in place of actual intellectual deterioration.

In catatonic excitement or stupor, a sort of barrier seems interposed between the examiner and patient, which cannot really be broken through, while, in delirium, unless the clouding of consciousness is very deep, the patient is usually not entirely inaccessible, so that occasional relevant answers to questions may be obtained. In excitements the motor activity is coarser and of a more senseless character. When typical signs of a catatonic condition, such as stereotypy or cerea flexibilitas are present, the diagnosis is, of course, rendered easier.

In manic depressive insanity, when the excitement and flight of ideas is so extreme that a certain clouding of consciousness results, perplexities may arise.

TREATMENT.

The treatment, of course, should be directed to the cause, and when the condition is due to the ingestion of a toxic substance, as alcohol, bromides, etc., this cause may be removed.

It is to be remembered that we frequently have to do without a condition which is primarily physical and not mental, and the treatment is somewhat the same as that of any acute disease, the chief indications being to keep up the strength of the patient by appropriate nourishment and to prevent exhaustion from the motor unrest, which is frequently extreme.

Of quieting measures the continuous warm bath is generally preferable to soporific drugs. By this method — which is warmly advocated by Kraepelin — the patient is kept in a warm bath at 92° to 95° until the restlessness subsides, and is then put to bed, when he frequently falls asleep. When restlessness reappears he is again placed in the bath, and this procedure is continued until his quiet becomes permanent.

This method is particularly useful in delirium tremens; but in asthenic conditions, caution must be used, and the patient's pulse and general condition carefully watched.

In some cases soporific drugs may be combined with the bath treatment.

Heart stimulants, as alcohol, strychnia and digitalis, may be indicated. In alcohol delirium, however, alcohol should be avoided, and if polyneuritis exists, even small doses given as a stimulant may be distinctly harmful.

When a delirium tremens is threatened during enforced abstinence in the course of an acute illness in an alcoholic person, the case is somewhat different. On this point a diversity of opinion exists, but I am inclined to believe that small doses of alcohol are here beneficial.

In senile delirium, also, the effect of alcohol may be distinctly good, being not only stimulative but sedative as well.

Nourishment should be given at regular intervals as in any acute illness. If, owing to the mental condition, the patient cannot be made to take the necessary amount, tube feeding may become necessary.

PROGNOSIS.

The prognosis is in general good when no underlying, incurable cause exists. In senile conditions and in prolonged alcohol delirium, an outcome in deterioration is to be feared.

UNDERFEEDING AND ITS ASSOCIATED ILLS.*

BY DUDLEY ROBERTS, M.D., BROOKLYN, N. Y.

THE state of nutrition of an individual, a race or a nation in large part determines relative fitness and consequent natural selection. Undoubtedly the dietetic habits are of primary importance in determining this question of nutrition; an improper food supply is detrimental to health, just as abstinence from food is incompatible with life. The effect of innumerable other factors in determining the state of nutrition is very evident but of secondary importance. The best habits tend to increase efficiency under given conditions and to make for the perpetuation of their possessors. The standard customs of a people are, then, actually evolved by choice and the force of circumstances, In any discussion of the best habits of diet it is not proper to overlook these facts; if a choice is to be made between the customs of different individuals or peoples, we have strong *a priori* grounds for the belief that the best habits obtain among the most efficient and the most successful in the struggle.

Whether we turn to history or draw our facts from the lives of those about us, we notice few examples of individuals or groups of individuals showing average efficiency while living on a dietary markedly under average. Among the most efficient physically, at least, the minimum has been shunned and the most liberal food supply has been sought. There are many interesting examples of "physiological economy in nutrition" that stand out as unexplainable exceptions. History furnishes us with no examples of groups of people of such a type achieving or becoming dominant. Generalized reductions in the dietary standards of a highly efficient people, based on theoretical considerations and brief periods of experimentation, seem, therefore, open to serious question.

During the past few years, however, there has arisen a vague idea that the people of this country eat too much; although there has been nothing approaching proof to show that the majority suffer from overeating or would be in better health on a lower dietary standard, this impression has many adherents among the medical profession. Such a broad generalization is hard to attack; it savors of fighting with shadows. Certainly, derogatory statements as to our general average of health are entirely unjustified; the average efficiency suggests no general physical incapacity. There is no reason to believe that the strong would be stronger for diminishing their food supply. If rhyme or reason there be in

* Read before the New York State Medical Society, Albany, N. Y., Jan. 30, 1907.

this prevalent impression, reference is actually made to a class taking little physical exercise, living under high tension, eating improper foods at all hours, frequently with great haste, and ingesting a liberal quantity of alcoholic beverages. The medical mind, struggling with the problem that this class presents, deprecates only the quantity of food ingested, and spreads the idea that overeating is common to all classes. If all instances of poor health be studied with care, free from preconceived prejudice, I am of the opinion that we shall reach an agreement that those who suffer from the over-ingestion of suitable foods eaten in proper amounts at one time and always in a correct way, are indeed few in number.

In the general clamor on this subject the great danger of eating too little has been very generally forgotten. I am convinced that there are many conditions incident to present day life that make for this menace to health. While figures on such a subject as this are not readily given, it is my conviction that more instances of true underfeeding come to my attention than cases of actual overfeeding in the sense in which that term has been used above. The resulting discomfort, loss of efficiency and danger of intercurrent disease indicate to me that of the two evils overfeeding is the preferable one.

There are two reasons that account in large part for the fact that underfeeding is so generally overlooked. In the first place, the present tendency of medicine is toward diagnosis of abnormalities existing in each and every organ. Underfeeding induces innumerable such abnormalities, the fundamental cause of which is not considered. On the other hand, underfeeding is corrected in the prosecution of some of our most valued forms of treatment, and the true cause is unknowingly removed; such therapeutic measures as change of climate, of scene and occupation, life in the open air, exercise, improvement of psychic control, gastric lavage and many tonic medicines depend in large measure on the improvement of nutrition resulting from a more abundant food supply; rest has a similar effect in decreasing the demand for food.

Those who have seriously attempted the determination of underfeeding have encountered a difficult problem; namely, What constitutes underfeeding and how is it to be recognized? As underfeeding and overfeeding are each compatible with unusual leanness or excessive corpulency, we cannot depend on standards of weight to furnish an absolute guide. The *per diem* ingestion of food varies widely in some instances from the standard without disastrous results, and we should not endeavor to decide the question simply on the estimation of the dietetic habits. The different ills occasioned by underfeeding are often caused by conditions detrimental to digestion, or the utilization of food or by depleting processes, and we cannot consider a resulting clinical picture as more than suggestive. The only absolutely final criterion is the effect of an increased diet. I do not advance the absurd proposition that all chronic ailments are to be treated with an increased diet, but I do contend that individuals afflicted with ills known to arise from poor general nourishment, who have the physical conditions suggestive of such a state and who on careful study are found to be living on an amount of nutritive material lower than is usually taken under like conditions of physiological activity, — that such individuals are entitled to the experimental test of treatment. In this way and only in this way have we positive proof of a tentative diagnosis; we are entirely justified in withholding all other possible modes of treatment until this important question can be finally settled.

No effort looking toward a complete knowledge of the gastro-intestinal tract and all its functions is to be spared; every possible cause of excessive waste of energy or destruction of tissue demands a careful search. Fortunately, our methods of accurate observation are constantly being increased. It is clearly appreciated that the removal of all these conditions is of primordial importance; when, however, this is impossible, it is clearly evident that we must supply food in such quantities that the general nutrition is built up in spite of abnormal waste. This is now the accepted practice in tubercular conditions. Failing in our search for a cause of excessive waste, we must turn to an actual failure of intake of nutritive material.

The clinical determination of the amount of true food stuffs habitually ingested by our patients has not been on a practicable basis, and consequently has infrequently been made with any degree of accuracy. We have absolutely no guide in the offhand answers of patients. The weighing of food is impracticable for general use. I have found that the caloric value and nitrogen content of certain bulks of food as eaten may be accurately determined if the patient under cross-examination can state his usual habits for each meal, using simple units of bulk as measures of quantity. Occasionally it is necessary to have records kept for several days. The nutrients and albumin contained in certain bulks of the commoner foods are given in tables published by the writer[1] or can be estimated by the more elaborate method of Fischer.

Daily observation of the diet of different classes of people has convinced me that with the gradual diminution of muscular labor there has been a natural tendency to lessen the food intake; in consequence of this our food standards to-day are, on the average, somewhat lower than those compiled by Voit, Atwater and others of an earlier period.

From an analysis of cases occurring in hospital, clinic and private practice it would seem that there are three chief causes of habitual underfeeding,— the effort to save time and money, the loss of appetite and complaints referred to the stomach. One or more of these three causes can almost always be found, and each tends to become more operative as the struggle becomes keener. Inherited customs might be spoken of as playing

[1] Jour. Amer. Med. Asso., April 21, 1906.

a predisposing part. The curtailment or omission of meals is exceedingly common because of the great demands of commercial and school life. Experience teaches that less discomfort results if meals are curtailed than if bolted, but underfeeding may gradually ensue. The cost of food is relatively high in our larger cities and among the poorer classes economy is practised to a dangerous degree. Loss of appetite is dependent on many conditions of mind and body; indoor life, physical and mental fatigue and emotional states are particularly common causes. The appetite may be described as "ravenous," but a few mouthfuls of food cause satiation. Loss of appetite is a condition incident to prolonged undernourishment, and the individual who for any reason eats too little food generally loses the natural desire.

In a very large proportion of cases underfeeding is due to attempts to relieve true or fancied gastro-intestinal derangements. The complaints commonly held to augur digestive disorder are many and varied. Relief of digestive embarrassment is apt to follow the lessening of the demands on the stomach, and if this diminution of food be temporary or carried only to a point of safety it is a valuable mode of treatment for many conditions. When spontaneous or induced recovery does not come about, the sparing of the stomach continues, and to the real or imagined trouble is added undernourishment of the entire body and actual gastric weakness. The physician is often responsible for this underfeeding, in failing to see that sufficient food is taken to keep up the nourishment. We have been careless of the fact that dietetic prohibitions are dangerous in the hands of those willing to follow them. The uncured chronic sufferer is apt to collect the advice of many physicians and try to cure himself by avoiding rich foods, starchy foods, fatty foods, sweet foods and meats.

The *clinical picture* of underfeeding is necessarily that of the various functional conditions to which it gives rise. The part of the body most affected by the general undernourishment depends on the constitution of the individual mind and body and on the work each part is called upon to perform. The nervous system is most commonly affected, as would be expected from its highly organized character; this is shown by deficiency or aberrancy of innervation, or by some irritability of weakness. Clinically there are certain types of ills most commonly seen to be due to underfeeding, and their separate study is warranted.

GASTRIC TYPES.

Functional disorders undoubtedly constitute the vast majority of all gastric abnormalities; such disorders are incident to almost every disturbance of health, but normal function returns on the resumption of proper conditions. There are, however, certain disturbing factors which tend to persist unless removed in the course of time by chance or conscious effort; in this manner a large proportion of "chronic dyspepsias" are to be accounted for. That all the various abnormalities of gastric function may result from poor general nourishment has frequently been suggested. That such abnormalities very frequently arise from habitual underfeeding is not at all appreciated, but can readily be proven by the criteria we have suggested. This has been the entire cause of such a large number of cases coming directly under my observation, cases of months' or years' duration, cases that had previously been subjected to all other plans of treatment, that I feel it is impossible for me to exaggerate its importance. Hyperacidity, subacidity, anacidity, myasthenia, atonic dilation, peristaltic unrest and spasm of the orifices, each with its particular clinical picture, may be caused simply by the ingestion of too little food. Subjectively there are complaints of belching, slight or excessive, of bloating after meals, constant or late afternoon nausea, nervous vomiting or regurgitation, loss of appetite or anorexia, epigastric pain or discomfort soon after taking food. Usually the patients are of a nervous type; generally they are rather thin, but sometimes pale and fat. Enteroptosis is common, but not always present. We are all familiar with the old and new lines of treatment to stimulate or depress the activity of the stomach. If we are interested in the study of actual causes we must probe into the dietetic habits not so much in search of objectionable foods as to see if a sufficient amount of food has been eaten. We surely cannot expect to find normal stomach functions in an undernourished individual, and yet the average dyspeptic continues to eat too little while all measures are tried except the rational cure.

We must admit, however, that having determined what we should judge to be an insufficient dietary, we are confronted with a rather anomalous situation, for the increased diet must be given to an individual who attributes many of his complaints to the ingestion of even a small amount of food. In practice it is seen that this difficulty is more imagined than real, as the patient soon discovers that two or three times the amount of properly selected food can be taken without causing more trouble. In the course of a few weeks the stomach begins to function normally and irritability disappears. The weight and general condition show steady improvement. Failure to achieve the desired result, if proper amounts of food are actually taken, shows us that we are indeed dealing with a condition other than underfeeding.

Organic changes in the stomach or neighboring organs generally tend to result in underfeeding and its associated disturbances of function, but the cure or amelioration of the organic disease is necessarily the first consideration. It should be recognized, however, that the resumption of proper dietetic habits is not necessarily spontaneous and that the persistence of underfeeding is a good and sufficient reason for the continuance of digestive disturbances following actually successful medical or surgical plans of treatment.

INTESTINAL TYPES.

The various intestinal neuroses, nervous diarrhea, mucous colic and atonic and spastic constipation are frequently found to be due to the ingestion of insufficient nourishment. This is the one dietetic plan that is rarely suggested for these conditions, but is most often of value, as it removes the causative condition while other plans depend on blandness to quiet or irritation to stimulate peristaltic activity. The patient is apt to learn, after months of suffering, that a choice of food makes comparatively little difference in these neuroses, and admits complete discouragement. If the condition is due to underfeeding, the ingesting of a generous diet and one chosen with comparatively little regard to stimulation or sedation of peristaltic activity soon shows remarkable results.

Chronic catarrhal conditions of the bowel are frequently complicated by functional disturbances from underfeeding, and the apparent failure in the treatment of some cases of colitis may be attributed to the oversight of this complication.

ANEMIC TYPE.

Although we have long known how little iron was needed by the body and how small were the daily losses compared with the iron content of almost any diet capable of sustaining life, we have continued to administer iron to the individual with hemoglobin below the average, and have constantly been on the alert to find a more efficacious form of this element. We have no reason to suppose that the red cells have the first call on the ingested proteid for use in the making of hemoglobin. A deficiency of available proteid means deficiency of hemoglobin, whether the deficiency be due to failure of proper intake or to the abnormal destruction of the ingested proteids. I am convinced that we should have these two possibilities in mind in every case of simple anemia. In the absence of those pathological conditions known to affect dissipation of energy or tissue destruction we may find, then, either a diet deficient in total nutrients but abundantly rich in proteid which is used up as a fuel food, or a diet markedly poor in proteids although little below the standard in total nutrients.

Among young children, school girls and young women there is a large number who owe their anemia to this kind of underfeeding. Some have an aversion to all albuminous foods and are overfond of fruit and candy. Others have no particular aversions, but eat little of anything. The resulting anemia is not evidenced alone by the color or estimation of hemoglobin, but often leads to attacks of faintness, dyspnea on exertion, palpitation of the heart, anemic hemorrhages and other symptoms of the true anemic state. Many of these cases have no nervous symptoms or actual gastro-intestinal disturbances. The condition of anemia has usually been recognized by all their medical advisers and iron in all its various forms administered for months. The reply to absolute and strict regulation of the diet is very rapid, if underfeeding is the true cause of the anemia. In every case of simple anemia without discoverable organic cause, this is the rational line of therapy.

NERVOUS TYPES.

The management of the class of conditions spoken of as the neuroses presents the most difficult of medical problems. Their complete understanding requires more knowledge than we possess of the psychic functions and their relation with the physical body. We are almost necessarily led into the maze of metaphysical speculation. Fundamental differences of opinion seem unavoidable. Formerly all treatment was physical, while to-day the pendulum is swinging in the other direction. It seems impossible to deny the mutual interdependence of the mind and the body. It is only in rare instances that we fail to see subversion of the higher mental faculties in depleted physical conditions. Practically it is observed that the so-called neuroses and poor general nourishment usually go hand in hand. Many have called attention to the almost universal habit among this class of individuals of eating less food than their stronger neighbors. Emphasis has usually been laid on the necessity of rest and "overfeeding" when the condition of neurasthenia or nervous exhaustion is reached. No doubt this type is more in need of radical treatment, but all about us are numbers of poor forlorn individuals living in a state of semi-invalidism, possibly able to work, but continually afflicted with "nerves"; with easily developed mental and physical fatigue, headaches and backaches, vertigo and nausea, insomnia and depression of spirits, all manner of aches and pains and disturbances of function. Some owe their condition purely to mental habits, but experience soon teaches that a stronger mind and a less irritable nervous system naturally follows an improvement in nutrition. In an astonishing number of instances a restoration to usefulness and health follows the ingestion of proper foods. The institution of the proper habits is the difficult problem to be worked out in each individual case; the tact and resourcefulness of the therapeutist are taxed to the uttermost. Harmful autosuggestions must be combated by reason and by encouraging suggestions. It is in this direction that our work as practitioners is broadening out. We are learning to treat not the body, but the whole man.

IMMUNITY AND THERAPEUTIC ACTION.

BY THOMAS J. MAYS, A.M., M.D., PHILADELPHIA, PA.

BELIEF in the existence of a principle that protects the animal organism against disease and injurious influences is coeval with the history of medicine. The *vis medicatrix naturæ* of Hippocrates, the *archæus* of Paracelsus, and the *vital spirit* of van Helmont, were but various expressions of this faith. The fact that typhoid fever, smallpox, yellow fever and many other diseases

protect against second attacks is a practical verification of this principle. The use of tobacco is another example of this. The novitiate becomes intoxicated and violently nauseated when he first begins to smoke or chew, which in the course of a short time passes off, never to reappear so long as the habit is maintained. A similar immunity to injurious influences prevails throughout the vegetable kingdom.

In what does this immunity consist, and what is its possible explanation? If one answer stands out more clearly than another, it is that it is not a guarding "spirit," or an "entity," which is separate from, and independent of, the normal physiologic processes of the body, as was believed in former days; but that it constitutes an integral and essential part of living matter. Spencer has defined life, proximately, as an organism which maintains its moving equilibrium by forces acting from within and from without; and in keeping with this definition, let us make a crude comparison between this moving mass and a spinning top. A top continues its moving equilibrium until it is overcome by the antagonistic action of external incidental forces. Now an antagonistic incidental force brings about one of two results. It either overthrows the top and brings its moving equilibrium to a premature end, or it interferes with it to such a degree that it will have to readjust itself to a new and an altered moving equilibrium. The same holds true of living matter. The unfriendly forces that disturb but do not destroy its moving equilibrium end their effects in establishing an altered equilibrium which still belongs to the confines of health. The toxic effects of tobacco, for example, establish a constitutional condition different from that which obtained before this agent was taken, bring about a readjustment of the bodily forces, and produce a toleration for quantities of this drug, which in the beginning provoked such disastrous results. Nor is there striking evidence that, if used in moderation, it produces any perceptible harmful action in the great majority of those who indulge in it. Seasickness, a disorder of the nervous system with a well recognized pathology, caused by the mechanical motion of ocean vessels, is another instance in which readjustment of bodily conditions conform to the action of hurtful external influences. Very few people who go on long sea voyages are entirely exempt from this disease, yet a single pronounced attack will give them immunity from it so long as they follow the sea. Both tobacco poisoning and seasickness are examples, then, in which bodily conditions have been forced to rearrange themselves into other but also normal attitudes, by the influences of unfriendly external forces, and there is no doubt that these results represent a broad general physiologic truth which underlies many other similar phenomena, like those of smallpox, yellow fever, typhoid fever, measles, scarlatina, etc.

What, then, is the nature of this immunity? What is its mechanism, and where is its location? Great efforts have been made in recent years to show that it consists of a process known as phagocytosis — a process in which the leucocytes of the body are supposed to be engaged principally in the special work of attacking and of devouring pathogenic organisms, and which is designated as a warfare against disease. That phagocytosis exists in the body is true, but whether its physiologic function consists in waging special war against disease is a different thing. Its element is a leucocyte in activity, possessing the characteristics of other unicellular organisms, *viz.*, of enveloping fragments of blood cells, of muscular and elastic fibers, of fat and pigmentary cells, of dust, bacteria and other foreign bodies, and of disintegrating them.

Viewed from any standpoint that it may be, there is no doubt that the function of phagocytosis is that which is exercised by leucocytes everywhere, and plays a very important part in the nutritive processes of the body, but the effort to compel it to assume the special and unnatural province of a disease-destroyer is, notwithstanding its present notoriety, too nebulous to require serious reflection. One of the highest authorities on pathology in Germany states that to define this process, the function of which is to absorb nutritive material, as a warfare against the causes of diseases, does not even rise to the dignity of a poetic conception of this phenomenon.[1]

It seems to the writer that by far the more feasible explanation of the genesis of immunity rests on purely physical principles. When two forces of unequal strength come in contact with one another, the stronger causes the weaker to move in a direction parallel to its own, and to a point where a mutual balance takes place; and although the latter may tend to rebound and to assume its former position, yet through the continuous operation of a series of such impacts, it will finally be forced to seek a new or another state of equilibrium, in which it will remain after the attacking force has ceased to act.

When a violent storm descends on a forest, each tree, individually and collectively, is forced to bear the brunt of the battle. The more unprotected, the older and feebler, trees and the weaker and more exposed branches of the younger and stronger trees, will be the first to go down in the onslaught. Even the strongest will be put to the severest test, and only those remain which possess the reserve power to fully react against the storm's fury. Every individual surviving tree is necessarily forced into another and a stronger equilibrium; and collectively, owing to the strain and furious ordeal to which it was subjected, and to the weeding out of many of its encumbering elements, the forest is physically stronger, less vulnerable, and far more able to withstand and resist a second attack of the same kind, than it was before. In other words, the forest is immune to another similar assault, and will remain so

[1] "Ein Vorgang (phagocytosis), der die Aufnahme von Nahrungsmaterial bezweckt, als einen Kampf zu bezeichnen, ist nicht einmal für eine poetische Betrachtungsweise dieser Lebenserscheinung zulässig." Ziegler, article, Entzündung, Eulenburg's Real-Encyclopædie, vol. vii, p. 88.

until time and circumstance undermine its stability.

The reaction between bodily tissues and the impact of external or internal incidental forces is, in effect, the same as that which takes place between the forest and the storm. Thus the effects of a slight blow are readily overcome; but the shock of severe injury is often grave enough to disturb the bodily equilibrium to such a degree that reaction is impossible, and death is the consequence. A strong and healthy body is much less liable to contract disease than one which is already partly broken down. Mortification and gangrene are more prone to follow wounds and injuries in individuals with depraved health, than under opposite and more favorable conditions. Wounds heal more rapidly and kindly in strong than in weak bodies. The same conflict between health and disease is witnessed in chronic ulcers, where the line between health and disease advances and recedes, causing the ulcer to appear large at one time and small at another, in direct correspondence with the strength and weakness of the part, and it is a noted fact that the line of treatment which is pursued universally is that of endeavoring to maintain the local and general resistance of the body. In threatened invasion of mortification, or of gangrene, the early application of stimulating poultices will sometimes avert the danger, or at least tend to circumscribe the process, and limit it to a smaller area than if left to its unrestricted course.

The *vis medicatrix naturæ* is, therefore, in all probability, an innate protective property of all tissues — a part of their very physiologic constitution, and does not reside in any separate special mythical or supposed real entity. Perhaps the most exact demonstration of the truth that this power of organic reaction or resistance is located, at least in the muscular tissue, and that it may be enhanced by or interfered with by drug-action, is found in the following graphic record given by the isolated frog's heart, under the influence of blood, curare and chloroform. Thus it has been discovered that curare 1: 80,000, *i. e.*, one part of curare to eighty thousand parts of 2% solution of blood, will produce the first series of tracings given in the illustration below. These tracings are slightly higher than those which blood alone is able to produce, as has been repeatedly proven. If, immediately after the curare tracings have been obtained, the heart is subjected to chloroform, 1: 500, *i. e.*, one part of chloroform to five hundred parts of 2% blood-solution, the second series of tracings is produced. Now, if after this a 2% solution of blood containing the same proportion of curare and chloroform, *i. e.*, one part of curare to eighty thousand, and one part of chloroform to five hundred parts of 2% blood-solution, is transfused through the heart, the third series of tracings is obtained.

What is the interpretation of these phenomena? First, the tracings which the heart is able to give with blood alone (not shown in the illustration), and which are slightly lower than those given by curare, in the proportion of 1: 80,000, must be taken as a standard of the normal strength or resistance of the heart muscle. Second, the tracings which are given by curare, 1: 80,000, demonstrate that this dose of curare is capable of increasing the heart's strength or resistance over and above the point which blood is capable of giving alone. Third, chloroform, 1: 500, depresses or almost entirely overcomes the heart's resistance or reaction, which is shown in the diminutive and depressed tracings; and, fourth, it is demonstrated that by combining curare in the proportion of 1: 80,000, with chloroform 1: 500 — the same doses which separately produced the first and second series of tracings — the curare dose will reinforce the physiologic resistance or reaction of the heart muscle to such a degree that it is enabled to successfully antagonize and almost wholly throw off the disintegrating effects of the chloroform dose, as is witnessed in the third series of tracings, which are nearly as high as the first series. In other words, the conflict between the two drugs is not a chemical, but a physical one, in which the heart muscle is simply the medium through which the stimulating influence of curare and the depressing effects of chloroform are enabled to display their antagonistic powers when properly adjusted.



That which is true of the antagonism between curare and chloroform is also found to be true of that of the following named drugs:

	Names of drugs and their dilutions with 2% blood-solution.		Elevations of tracings in millimeters.
I.	Atropine,	1: 160,000	13
	Alcohol,	1: 25	4
	Effects of their combined action,		8
II.	Aconitine,	1: 160,000	15
	Ether,	1: 5	5
	Effects of their combined action,		10
III.	Curare,	1: 80,000	18
	Ether,	1: 10	10
	Effects of their combined action,		18
IV.	Atropine,	1: 160,000	10
	Ether,	1: 10	7
	Effects of their combined action,		10
V.	Atropine,	1: 160,000	8
	Chloroform,	1: 500	2
	Effects of their combined action,		9
VI.	Curare,	1 :80,000	12
	Chloroform,	1: 500	3
	Effects of their combined action,		9
VII.	Aconitine,	1: 160,000	16
	Chloroform,	1: 500	4
	Effects of their combined action,		15
VIII.	Strychnine,	1: 160,000	14
	Chloroform,	1: 500	9
	Effects of their combined action,		15

	Names of drugs and their dilutions with 2% blood-solution.		Elevations of tracings in millimeters.
	Aconitine,	1: 160,000	16
IX.	Curare,	1: 26	5
	Effects of their combined action,		15
	Atropine,	1: 160,000	15
X.	Strychnine,	1: 1,000	4
	Effects of their combined action,		14
	Strychnine,	1: 160,000	17
XI.	Atropine,	1: 1,000	4
	Effects of their combined action,		15

Several things are made very clear by the preceding considerations. One is, that drugs expend their forces directly on the bodily textures, and not on any hypothetical intervening medium. Another is, that small or minimum doses enhance bodily resistance, and that large or maximum doses depress or paralyze the same. And still another is, that minimum doses successfully antagonize the disintegrating effects of maximum doses. These antagonistic effects are displayed here as decidedly as if they had been wrought by the two mechanical forces of attraction and repulsion, and they give us an exact mathematical demonstration of the power which drugs have of supporting and preserving life when attacked by adverse forces. Now, if we recognize the fact that disease is but the manifestation of forces which move in a direction adversely to health, and substitute these for the operation of the maximum drug doses in the above illustrations, do we not have a clear picture before us, as to how a large class of drugs in minimum doses combat disease, *viz.*, by stimulation? On the other hand, is it not equally clear how maximum doses possess the property of depressing hyperactivity of the bodily textures — a pathologic condition which lies at the bottom of many important diseases — and thus give us at least a fundamental idea of the action of two other large classes of drugs, *viz.*, antiseptics and antipyretics?

DIAGNOSIS AND TREATMENT OF DIPHTHERIA IN YOUNG CHILDREN.*

BY F. P. WEBSTER, M.D.,
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THIS paper is not intended to be a complete consideration of the diagnosis and treatment of diphtheria in young children. It deals with diagnosis particularly in young children, because it is among them that most cases occur, and more especially because the younger the child, the higher the mortality and the greater the urgency of diagnosis and treatment. Moreover, since the general use of antitoxin, the mortality in the very young has not been reduced proportionately to that in older patients.

In making a diagnosis of diphtheria, we have two methods: the bacteriological and the clinical.

The bacteriological method is subdivided into immediate examination of smears and late examination of cultures.

Diagnosis by smears is unreliable, as when smears show no bacilli, bacilli may be shown by culture. By a smear you can only note the presence or absence of bacilli, like the Klebs-Löffler. However, this direct method is suggestive or corroborative when positive, but when negative should be disregarded entirely.

The examination of cultures is the most certain method we have of diagnosticating diphtheria. But is this as valuable a method for purposes of treatment as the clinical diagnosis?

In recent years laboratory diagnosis has properly acquired a high position in the minds of most physicians, but I believe, in the estimation of of many, its position is too exalted. I have had sufficient experience in the midst of laboratory diagnosis to know that it has some fallacies. Aside from the possibility of error, bacteriological diagnosis must use up valuable time; in the case of diphtheria, probably, twelve hours or more. Can we afford this time for purposes of treatment?

Clinically, by certain symptoms and signs familiar to us, we can usually recognize a probable case of diphtheria. There is quite a possibility of mistake; still, bacteriological examinations have generally shown earlier clinical diagnoses to have been correct.

I believe that textbooks in their discussion of diphtheria mislead. They follow the old rule of etiology, pathology, symptomatology, diagnosis, prognosis and treatment, particularly, treatment follows diagnosis. For diagnosis they teach you to rely upon cultures. Here, it seems to me, is a disease in which, especially in young children, treatment should come first upon suspicion. Then positive diagnosis should follow for purposes of quarantine. In the hands of the general practitioner, the reliance upon culture examinations has a damaging effect upon treatment. A physician may be reluctant to make a diagnosis of diphtheria. He may feel that he is working in the interest of his patient, or the family of the patient, to avoid quarantine if possible; to wait for the report of the culture, hoping that it may be negative. He feels justified in such delay because he follows the instruction of the books. He knows that laboratory diagnosis is the surer diagnosis. He knows that his two best diagnostic aids are, first, the report of the culture; second, the spread of the membrane.

In medicine it is good to feel certain; perhaps in a dozen hours one can read, "Diphtheria bacilli found," or can note the visible spread of membrane, although the invisible spread of toxins has been vaster. One then has diagnostic security; the child has less chance of recovery. I believe that the proportionately high mortality of diphtheria in young children is due in part to reluctance to call certain suspicious cases diphtheria and to institute quarantine. An older patient can naturally better tolerate such delay.

We, as practitioners, want the earliest possible diagnosis, because the cases treated earliest have given much the best results. Then, too, isolation and immunization are more certainly accomplished.

Diphtheria antitoxin has been shown to be

* Read to the Portland Medical Club, June 6, 1907.

harmless, and may be beneficial to patients without diphtheria, *e. g.*, in tonsillitis and in scarlet fever. We shall then do no harm in giving antitoxin to a child without diphtheria. It must appear to us that lives have been lost by waiting for more diagnostic evidence, and that lives have not been lost through giving antitoxin on suspicion. If so, for purposes of treatment, which implies prompt treatment, the clinical diagnosis must be the best. Its only possible faults are that we may unnecessarily disturb families and deprive them temporarily of their freedom. Such failings seem trivial when contrasted with the fact that we must otherwise sacrifice lives.

I shall depart from this debate to mention a few cases and a few facts which I think of relevant interest. Pediatrists call attention to the great importance of the examination of the throats of all sick children. Failure in this I know has harmed patients and physicians.

I recall a case of a two-weeks-old baby whose only symptom noticed by its mother was that it would not nurse. Much to my surprise its throat showed advanced diphtheria.

In cases of doubtful diagnosis repeated throat examinations should be made. Young children, sick with diphtheria, may show no evidence of membrane formation for several days. Last winter I watched a fifteen-months-old baby for several days unable to make a diagnosis. The only symptoms were moderate fever, apathy, anorexia and occasional vomiting. The physical examination was negative until on the third day a membranous exudate appeared upon one tonsil and proved to be diphtheritic.

That very young children rarely have follicular tonsillitis should be borne in mind. Recently I noticed the statement of a German physician, Seibert, that in very young children, a probable diagnosis of diphtheria should be made upon slight evidence. It brought into my memory a patient I saw a year ago, a child two and one-half years old, sick about twelve hours with moderate fever and lassitude. On examination one tonsil showed two small patches no larger than those ordinarily seen in follicular tonsillitis, but the unilateral position and especially the age of the patient made me suspicious enough to give 3,000 units of antitoxin. The patches had nearly disappeared the next day, by the time I had found bacilli in a culture. I have seen several similar cases, which makes me believe that they are not uncommon.

My conclusions in diagnosis are that in young children, a probable diagnosis of diphtheria should be made upon comparatively slight evidence; that the dangers of waiting are so great that a clinical diagnosis is of first importance and all sufficient for the purpose of treatment; and that cultures are of value mostly for purposes of immunization and quarantine.

In larger cities where the mortality of diphtheria was from 35% to 50% without antitoxin, it is now less than 10%. Cases treated the first day show a very low death-rate, *e. g.*, in the Boston City Hospital, 180 doctors and nurses had diphtheria without a fatal result. In young children the urgency of early treatment is naturally greater. It is a fact that in early life the mortality of diphtheria with antitoxin has not been proportionately diminished. Under two years of age the mortality is still about 30% in recognized cases.

This higher death-rate in early life is attributed to a greater susceptibility to the toxins and to the greater frequency of pulmonary complications.

It seems to me that diphtheria in an infant should be entirely amenable to a specific treatment that is given early enough. I believe the higher mortality is at least in part due to such reasons as failure in the routine examination of throats, the reliance upon cultures, *i. e.*, the failure to make a diagnosis without delay, and the use of too small doses of antitoxin.

The kind of antitoxin employed is of importance, and I believe that only the newer concentrated forms of antitoxin, of which Lederle's is a type, should be used. Concentrated antitoxin is much more easily injected, — a fact of great value in treating children. It encourages the use of larger doses, and the untoward effects of the horse-serum are less.

I do not intend to go into detail of dosage, but will mention my opinion, that in young children the initial dose should average 3,000 to 4,000 units rather than less, because recovery is quicker and it is less often necessary to repeat the injection, and because, appreciating the harmless character of antitoxin, it is better to give too large rather than an insufficient dose.

In a general way it may be stated that the dose of antitoxin is not dependent upon age, but upon the apparent severity of the disease and its duration when discovered.

One should remember that a nursing mother, sick with diphtheria, excretes antitoxin in her milk. Last fall I had such a patient with a suckling one month old. The mother had a severe form of tonsillar diphtheria. Her boy, six years old, developed diphtheria within twenty-four hours; but the baby nursed at the mother's breast and remained well. This supposition of antitoxin in the breast-milk may be incorrect or only a partial explanation. Recently S. Amberg found that all well nourished young infants have a high opsonic content of the blood; that the value of the opsonic content is in proportion to the nutrition of the infant; that breast-fed infants resist disease better because they are generally better nourished.

The Immediate Prophylaxis of Diphtheria.

This is generally considered to mean the administration of an immunizing dose of antitoxin to all exposed; but it should mean more. A physician showing a proper regard for other children, either wears a special hat and gown in attendance, afterward throroughly cleanses the exposed portions of his person, or the equivalent of these, or else gives an immunizing dose of antitoxin to all other children whom he attends

at the same time. There is no doubt about the possibility of carrying the disease in the clothes. Most physicians are willing to take the time for good surgical technic, but I believe many are not willing to take the time for good medical technic, of which this is a good example.

Quarantine. — In Portland, all patients receiving board of health antitoxin treatment are quarantined three weeks. Of course all cases of diphtheria should be quarantined, but I do not believe that all who receive antitoxin treatment should be long quarantined; for example, if in a suspected case antitoxin is given as a safeguard, and if by cultures the case proves not to be diphtheria, I think quarantine should cease. A careful board of health may reply that some physicians would fake cultures, that all cases of diphtheria would not be kept in quarantine. On the other side there is the fact that doctors, at times disliking to quarantine unnecessarily, will, to be more certain of diagnosis, let a mild case advance; and so while the use of board of health antitoxin compels quarantine, lives of patients will perhaps unconsciously be risked. I know of a case of a child three years old, living in a boarding house, which one would not like to quarantine unnecessarily. The diagnosis of diphtheria being uncertain a bacteriological examination was awaited. The bacteriological report was positive and twenty-four hours later the child died.

I believe really that such delays are faults of physicians and not faults of board of health rules; and, finally, that it is surely better to quarantine a number of families needlessly than to lose one patient through fear of it.

A SIMPLE METHOD OF RECONSTRUCTING NERVE PLEXUSES.

BY R. M. SMITH, M.D., AND E. W. TAYLOR, M.D., BOSTON.

A COMMON difficulty in the study of anatomy is the visualizing of relations. This is particularly true of the nervous system. However elaborate diagrams and plates may be, they fail to impress the important spatial relations of various structures. Dissection naturally comes to one's rescue in this respect, but even here the natural difficulties of continuing work in the dissecting room, after the early student years, are practically prohibitive. Any simpler resource, therefore, which will tend to impress upon the mind the relationship of correlated parts is of value, not only in teaching anatomy, but also in learning it. Hence have arisen various methods of more graphic representation than even the best illustrations can supply. Clay modeling, for example, has long been used with great success in the reconstruction of internal organs and, to some degree, in the study of the nervous system. Herring[1] describes in a convincing way the value of clay modeling as applied to the nervous system, and the extraordinary work of Florence R. Sabin in reconstructing the oblongata is well known to all students of the subject.

Perhaps the most elaborate attempt of this sort in teaching the finer anatomy of the central nervous system is described by Hardesty,[2] of the University of California. In a paper entitled, "A Class Model of the Spinal Cord," Hardesty describes in great detail a method of tracing the course of fibers in the spinal cord and lower oblongata by graphic methods. His plan is to make several cross sections of the spinal cord by means of wax plate models, accurately outlined from actual specimens. Stout wire is then used to connect the levels and to represent the various fiber tracts which may be easily distinguished by painting in different colors. By these means it is possible to build up in very considerable detail the essential internal structure of portions of the nervous system. In fact, the method has proved so practicable in Hardesty's hands that the students are expected personally to make such models as part of their training in the anatomy of the nervous system. It need hardly be said that the details which such a model brings out are not to be obtained through dissection, nor through the study of sections by the microscope, and yet these are the important points and far overbalance in significance to the clinician the descriptions which may be derived from textbooks and the ideas which are obtained from the ordinary course in descriptive anatomy.

A matter of considerable difficulty to the medical student is a proper understanding of the significance of nerve plexuses in relation, on the one hand, to segmental lesions of the cord, and, on the other, to disturbances in the distribution of peripheral nerves. In other words, the exact relation of nerve roots to peripheral nerves is not forthwith apparent and cannot be made so by dissection. Stimulated by Hardesty's very much more elaborate work, it occurred to us that a simple means of demonstrating by a graphic method the relation of nerve roots to peripheral distribution would be of value in teaching. In carrying out this general idea, the following means suggested themselves which are absolutely simple and at the same time demonstrate in striking fashion the points desired.

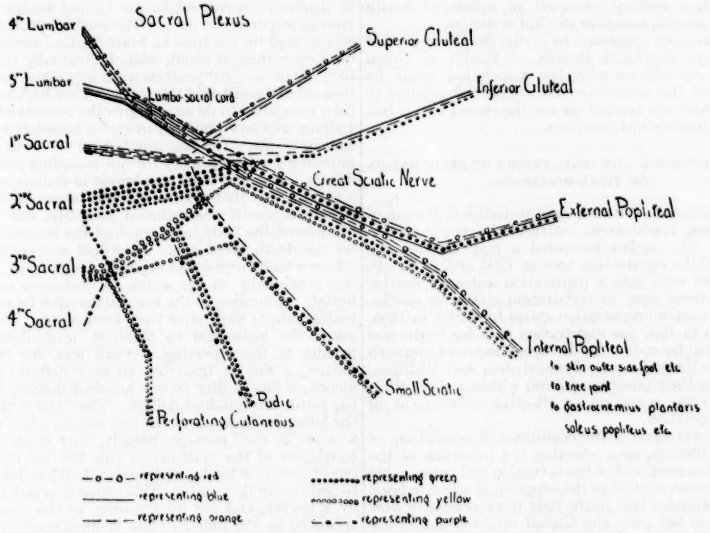
A piece of stiff cardboard is the first requisite. On this cardboard, preferably white, are specified the various nerve roots which enter into the composition of the plexus. Each of these nerve roots is represented by a single colored yarn or worsted, and by as many strands as the final distribution of the particular nerve root in the periphery may demand. As the various nerve roots, each represented by its color, break up in the plexus, the strands of worsted are separated and joined with those which come from other nerve roots according to the ascertained anatomical facts, ultimately emerging as the individual peripheral nerve containing fibers of the various nerve roots from which the special nerve has origin. At points where the plexus

[1] Herring: Clay Modeling in the Study of Anatomy. Jour. Am. Med. Asso., 1904, xliii, 454.

[2] Hardesty: A Class Model of the Spinal Cord. Bull. Johns Hopkins Hosp., 1906, xvii, 43.

divides, and at any others, for the purpose of securing the yarn to the underlying cardboard, we have found the most convenient means the use of very fine wire which may be looped over the strands of worsted and fastened on the under side of the cardboard. The result of this very simple device for making clear the components of peripheral nerves is entirely satisfactory. It is possible at once to determine precisely the nerve roots from which a given peripheral nerve springs and conversely to determine how wide a peripheral distribution any single nerve root has. A reference to the accompanying drawing will illustrate the method better than a more detailed verbal description.

The plan of reconstructing the plexuses, as outlined in what we have said, is so simple and carried out with so little expenditure of time, that it might well be used for an entire class. Furthermore, the materials necessary are so inexpensive and so easily procured that a large class could be provided at extremely small cost. The essential advantage of such a method of studying nerve supply is that the student does the work himself, referring naturally to anatomical textbooks for details of distribution. We have no question that once having worked out the plexuses in this way at first hand and unaided, a student would have a clearer and more practical conception of their structure than through many



Representing the six segments and their nerve roots which go to constitute the sacral plexus by variously formed lines, which in the actual model are much more graphically represented by different colored worsteds, it may easily be seen how the plan of the plexus may be worked out. For example, the inferior gluteal nerve is represented in the fifth lumbar and first and second sacral nerve roots, the great sciatic in all the nerve roots, excepting the fourth sacral, etc. On the other hand, should one wish to determine quickly what the peripheral representation, for example, of the first sacral nerve root is, it may forthwith be seen that the inferior gluteal, external and internal popliteal, and the small sciatic nerves derive elements from it. If carried out further, there is no difficulty in determining the segmental distribution of the sensory nerve supply, a matter which is apparently puzzling to the student.

hours devoted to textbook descriptions and even to dissection. The reconstruction of plexuses, in this manner, has also much practical importance from the standpoint of neurological diagnosis. It is not likely, after such individual work, that a person would forget the difference between a segmental or nerve root lesion and one in which the peripheral nerve was involved. It is not to be questioned, also, that the relatively small amount of work and study requisite to the correct construction of the plexuses would be of very material value in rendering the knowledge so obtained permanent.

Antituberculosis Dispensary at Bahia, Brazil. — The corner-stone of a dispensary for the aid of the tuberculous was recently laid at Bahia, with appropriate ceremonies, the governor of the state presiding. It is the work of the Bahia Antituberculosis League, which was organized last spring by the professors of the medical faculty and others.

Reports of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

THIRTY-FIFTH ANNUAL MEETING, HELD AT ATLANTIC CITY, N. J., SEPT. 30, OCT. 1, 2, 3 AND 4, 1907.

THE Laboratory Section held its meetings Sept. 30, under the chairmanship of DR. HIBBERT W. HILL, of Minneapolis, Minn.

The General Association met in the West Solarium of the Marlborough-Blenheim Hotel, with the president, DR. DOMINGO ORVANANOS, of Mexico City, in the chair. One hundred and seven applicants were elected to membership from different sections of America and Mexico.

There were two new sections organized at this meeting: first, a section composed of municipal health officers; second, a section on vital statistics.

A committee appointed to invite the Conference of State and Provincial Boards of Health of North America to affiliate with the association made its report, but this conference did not deem it prudent to affiliate with the association for the reason that it had separate and distinct functions.

THE OUTLOOK FOR A GENERAL SYSTEM OF REGISTRATION OF VITAL STATISTICS.

DR. CRESSY L. WILBUR, chief statistician, Bureau of the Census, Washington, contributed a paper on this subject. The author presented a map showing the extent of the registration area in 1895 and 1907. In 1895 there were only 8 registration states for deaths. In 1907 there were 15 registration states for deaths.

There were no registration states for births in 1895, and even in 1907 the registration area for births was represented by only a few interrogation marks on such states as Massachusetts, Pennsylvania and Michigan, indicating their possible addition within a short time, owing to the operation or effective enforcement of recent legislation.

Study was made of the conditions of population, as density, literacy, etc., affecting the extension of the registration area, and of the favorable and unfavorable circumstances relative to the adoption of effective laws. It was estimated that in the light of experience of slow progress in the past, the United States could hardly expect to have a satisfactory system of registration of vital statistics, including both births and deaths and covering the entire country, much before the middle of the present century, at which time, if all of the present agencies now effectively co-operating shall accomplish this result, the nation will have reached a place of advancement in this respect that would be quite equal to that occupied at the present day by Japan.

A standard certificate of death had been prepared by the association and the Bureau of the Census, and extensively employed with resulting advantage in causing uniformity of the data collected; yet many states and cities had continued to employ their old forms, whose variety was multitudinous, and offices that had adopted the standard blank had not hesitated to materially change it, so that the information obtained was frequently entirely different from what it purported to be when returned to the Bureau of the Census upon the actual standard blank.

The amazing thing about the way in which many deaths from tuberculosis were reported, as abscess of the chest, brain fever, marasmus, etc., was the general indifference of registration officials to the necessity of securing accurate statements of causes of death.

Finally, he said if the people of the United States wanted a thorough system of registration of vital statistics they could get it. It would not be necessary to wait fifty or sixty years for the slow adoption and enforcement of adequate laws. The process could be hastened, and without departing from the constitutional requirement that the primary control of registration should be by the states, and not by the federal government. If Congress, if the people of the United States, were really interested in this matter, and were determined that this thing should be done, the states would readily be brought into line.

DISCUSSION.

DR. JOHN N. HURTY, of Indianapolis, emphasized the importance of accurate registration of vital statistics. They have been trying to collect accurate statistics of deaths in Indiana, and now they are getting over 95% of deaths recorded, while the United States Census Bureau required but 90%. The medical profession, as represented by the Indiana State Medical Society, had done everything it could, while individually the members of the medical profession at large had not come forward and assisted in this work. They had, however, been compelled to do so and give the records of death. Indiana was now prepared to give a complete registration of births. The law was behind the state board, imposing a severe penalty for not recording births and deaths. If a dead body was buried in Indiana without a perrit, and that permit was not issued until a certificate of death was returned complete, the coroner disinterred the body, and required the necessary data on the death certificate. They had a special police officer whose income was dependent upon fees, and he was continually on the watch for instances of illegal burial. According to the law, births shall be recorded within twenty days after their occurrence. They had asked the legislature to make it immediate. The penalty of not reporting a death was, for the first offense, a fine of from ten to fifty dollars; for the second, a fine of fifty to one hundred dollars, and for the third, one hundred dollars. They had a clause in the latter stricken out at the last minute when the bill was on its final passage, namely, that upon a third conviction of the violation of this law for failure to report deaths or births, a physician shall lose his license to practice in that state. This clause was stricken out by a lawyer, and not by a doctor, as the clause was approved by the Indiana State Medical Society.

DR. QUITMAN KOHNKE, of Covington, La., suggested to the officials of the Census Bureau that a uniform system of laws be submitted to each state for adoption. Law was the main reason why mortality statistics were not the same in every state. He hoped the Census Bureau would assist the whole country in getting a uniform system of laws to make the statistics of one state comparable to those of another.

DR. HENRY MITCHELL, of Asbury Park, N. J., said that in an experience of about fourteen years in New Jersey, they had found that it was not a question of law, but one of enforcement of the law.

DR. WILBUR, in closing the discussion, said that the association had been co-operating with the Census Bureau for five years, first, in laying down principles on which a successful registration law could be constructed, and, second, in drafting such laws for adoption in various states. If registrars depended on the patriotic motives of physicians or midwives or anybody else to comply with the law, in regard to recording births and deaths, if they were not put in jail when they violated it, registration would be worthless. In Germany or France they had 100% of births and deaths.

SOURCES OF ERROR IN THE LABORATORY DIAGNOSIS OF DIPHTHERIA.

Dr. Hibbert W. Hill, of Minneapolis, submitted what was actual proof and what must be assumed to make a bacteriological diagnosis of diphtheria logical and a practical success. *First*, the finding of diphtheria bacilli in a culture taken by itself proved nothing except their presence in the culture. *Second*, granting that the culture was properly taken, the finding of bacilli proved their presence in the throat, etc., from which the culture was taken, nothing more. *Third*, the presence of diphtheria bacilli in the throat plus appropriate symptoms justified the assumption that the patient had the disease, the evidence being that from 98% to 99% of all patients showing this condition had the disease. *Fourth*, the presence of diphtheria bacilli in the throat, without symptoms, required further data as to exposure. If a clear history of the absence of exposure could be obtained, it was legitimate to assume that the diphtheria bacilli found were likely to be nonvirulent, the evidence being that 80% of such cases were not virulent. If exposure was established, a legitimate assumption was that diphtheria bacilli were virulent, and therefore, when present, might infect others who would come down with the disease in a short time, the evidence being that the infection obtained from a cilnical case was almost invariable. *Fifth*, failure to find diphtheria bacilli in a culture was about 90% conclusive of their absence in the throat. If a second culture be taken, and also proved negative, the two consecutive negatives taken together afforded about 99% conclusive evidence. If two or three or four negatives were obtained, the absence of diphtheria bacilli was established with direct finality.

DISCUSSION.

Dr. John N. Hurty asked whether it was not possible that a nonvirulent diphtheria bacillus in one throat might become virulent in another. For instance, the health officer might visit a school and find two or three cases of virulent diphtheria, and yet if cultures were taken from the throat of every child in the room, diphtheria bacilli would be found, but as these were making a good defense against the disease, it was assumed that the bacilli were nonvirulent. In Indiana they had been acting on the assumption that the bacilli were virulent when found in these children's throats. When found, action was taken immediately. If one went into a family to see a case of diphtheria, it was clinical diphtheria or laboratory diphtheria, and whichever it was, antitoxin should be used on all children in the household, giving them immunizing doses.

He had used antitoxin liberally whenever diphtheria existed, and felt that in several instances in his state he had stopped epidemics of the disease. For instance, in one county he rode twenty-seven miles, and in that time visited sixteen families, finding six cases of diphtheria. He immunized every child in each family, and this was the end of the diphtheria, in that there was no further spread of the disease. They did not inquire as to whether the children were infected with virulent or nonvirulent diphtheria bacilli, and he believed this was good practice to recommend.

Dr. William C. Woodward, of Washington, D. C., called attention to the distinction that existed between medical diphtheria and legal diphtheria. A year or two ago the question arose in the District of Columbia as to the exact status of a child in whose throat or nose diphtheria had been found, but who showed no clinical symptoms of the disease, and a wise corporation counsel decided that if diphtheria bacilli were found in a man's or child's nose or throat, that that man or child had diphtheria. The question of the presence or the absence of the clinical symptoms counted for nothing in law, and that a man or child was a danger to the community who had diphtheria, and should be treated as such. Whether that was going to hold in the case of diphtheria patients, he did not know.

Dr. B. Franklin Royer, of Philadelphia, was much impressed with the statement of Dr. Woodward as to what constituted legal diphtheria, and yet the speaker questioned if in a court of law one could prove legal diphtheria by finding the bacillus in accordance with bacteriological methods in the throat or nose cultures. These methods at present were snapshot, were not satisfactory to clinicians, nor to bacteriologists. The great trouble was that so many organisms were met with which closely resembled the diphtheria bacillus, it was with great difficulty it could be positively excluded. Those who dealt largely with bacteriology agreed that a negative test of virulence with a culture that had been injected into a guinea pig was the only reliable test which would exclude some of the forms of diphtheroid organisms, and the simple presence of an organism pronounced by a bacteriologist from his routine culture methods, such as were used in public health work, was not sufficient evidence.

A positive report that such an organism as the diphtheria bacillus was present would not be accepted in a court of law, if some one questioned whether it was a virulent organism or the true diphtheria bacillus. If its virulence had been tested, and it killed a guinea pig with typical lesions, it would be accepted.

Dr. Charles V. Chapin, of Providence, R. I., said that as a health officer he undertook to restrain a boy who had diphtheria bacilli in his throat from mingling with other children, but he was not sick, and the court decided that he did not have diphtheria. Disease was one thing, but infection with disease germs was another thing. He felt very sure that the courts would interpret the term disease as applying to a pathological condition of the human body. They would not apply the term disease to a condition in which there was the presence simply of the organisms which might cause disease, and when, for some reason or other, they did not cause disease.

Dr. J. J. Kinyoun, of Florida, said a great many health officers and the majority of physicians placed too much stress on positive tests or preliminary cultures. He thought that just as soon as they attached less importance to preliminary tests and more importance to discharge tests, the better it would be for patients. In other words, the free use of antitoxin would cure more cases of diphtheria and render the office of the health officer less difficult. As to what constituted diphtheria legally, he felt that the judge who rendered the decision referred to by Dr. Chapin was wrong, because if that generally held, health officers would have to abandon practically all quarantine measures.

Dr. William Bailey, of Louisville, said he did not appreciate fully the close distinction that was made between legal and nonlegal diphtheria. Whatever might be the judgment of a court, he thought that any child who had the bacillus of diphtheria in his throat ought to be put under control. He would not like a child of his to mingle with such a child, and even if it could be decided technically that in a given case the bacillus was nonvirulent, it might become virulent. On the same principle one might take a rag or cloth that had come in contact with a smallpox patient into court, and while the court would not decide, perhaps, that the rag had smallpox and could not be convicted, yet he thought it was wise to take care of the rag the same as he would a child who had the bacilli of diphtheria in his throat.

DR. CHARLES A. HODGETTS, of Toronto, Ontario, mentioned an industrial school in Ontario of 250 scholars, in which for two or three years, now and then, there were true cases of diphtheria which were isolated. Of this number over 50% of the pupils were found to be the carriers of diphtheria bacilli. Those found to be sick were given immunizing doses of antitoxin and were segregated. The school-teachers and children, however, grew tired of this segregation, and very soon the children were allowed to mix with one another. It would not surprise him if at any time cases of diphtheria were reported from that school. These cases should be dealt with in a rigid manner.

DR. HILL, in closing the discussion, said it was necessary to take action as soon as possible whenever the existence of diphtheria was suspected among school children.

CONTROL OF SO-CALLED MINOR INFECTIOUS DISEASES.

Papers were read on this subject by DRS. A. G. YOUNG, of Maine, and ALFONSO PRUNEDA, of Mexico City, in which the authors discussed measures for controlling whooping-cough, measles, etc.

DISCUSSION.

DR. GARDNER T. SWARTS, of Providence, R. I., said there was nothing more annoying than a lack of control of the minor infectious diseases. Health officers and physicians could not impress upon the public too strongly the importance of controlling measles and whooping-cough, for as long as these diseases were treated with indifference both by physicians and the people, so long would they continue to spread contagion. Even though they could not be altogether prevented, they could be checked in a measure. The sooner physicians impressed upon school authorities and teachers that these minor diseases were dangerous to the public health, and laws and ordinances were enacted to that effect, the better it would be for mankind.

DR. QUITMAN KOHNKE said the importance of the so-called minor infectious diseases depended on locality, environment and climatic condition. Each locality should be guided by the local importance of any particular disease, and should adopt such measures as were justified.

TYPHOID FEVER AT KNOXVILLE, TENN., AND ITS RELATION TO THE WATER SUPPLY.

MESSRS. ROBERT S. WESTON and RALPH C. TARBETT, of Boston, contributed a joint paper on this subject. The evidence was against the supposition that the water supply was a cause of the high death-rate from typhoid fever at Knoxville. The writers maintained that if the geographical distribution of each case for two or three years could be studied as it occurred, the causes of the disease would be shown and the remedy would suggest itself. Their studies show the importance of paying more attention to the hygiene of the household independently of the great problems of public water supply and sewerage. Undisinfected typhoid excreta and other infectious material which could become insect-borne should be destroyed and typhoid patients should be forced by education and law to protect their neighbors against infectious disease.

DISCUSSION.

DR. QUITMAN KOHNKE said that his experience in New Orleans bore out the opinion that typhoid fever there was in at least 90% of the cases brought from other places, notably summer resorts. Typhoid fever should be considered important wherever it occurred, and it would be competent in his opinion for the association to issue recommendations based upon those facts.

DR. JOHN A. MACDONALD, of Brandon, Manitoba, said that typhoid fever had been prevalent in Brandon and thereabouts for twenty-four years, every fall. Sometimes it would come on in August and run its course in epidemic form for two or three months. One thing very noticeable this year was the absolute absence of flies until about six weeks ago. It is a curious coincidence, if such it might be termed, that typhoid was absent until the flies appeared. During the greater part of the summer very few flies were seen and it seemed to him that this was a noticeable observation in connection with the possible dissemination of typhoid fever by flies.

DR. EDWARD V. HUG, of Lorain, Ohio, said that Lorain was one of the first cities to adopt the mechanical filtration method of dealing with water. For several years this city had no sewer system. This was prior to 1892, and during those years the death-rate from typhoid was about 44 per 100,000 population. During the past two years, 1906 and 1907, so far the death-rate had reached 34 per 100,000. But during these years the city had been building a new plant, with a capacity of six million gallons a day.

DR. HIBBERT W. HILL had seen outbreaks of typhoid fever beginning with the freezing of the water supply and terminating when the river, for instance, thawed. In a town in the Red River Valley, with a population of four thousand people, 10% of the inhabitants had typhoid fever due to a polluted water supply. The epidemic began when the river was frozen, but ceased when the river had thawed out again.

DR. HENRY D. PEASE, of Albany, N. Y., corroborated what Dr. Hill had said with reference to winter epidemics of typhoid fever due to the pollution of water supplies. He mentioned five or six epidemics of typhoid fever that had occurred, some in small towns, and some in large ones, which followed the course that was mentioned.

CONTACT INSPECTION.

DR. CHARLES V. CHAPIN, of Providence, R. I., said the valuable report on typhoid fever in our army during the Spanish war and the observations of the English in the Boer war indicated very clearly contact infection as the chief factor in camp typhoid. Jordan's report on typhoid fever in Winnipeg also laid great stress on this mode of infection, and many recent writers in Germany and America attached great importance to it. It was the author's opinion that the larger part of the typhoid fever in the United States to-day was caused in this way. Only a small part was due to infected water or milk, and still less to infected air.

There was ample room for improvement in the management of contagious diseases. We must teach those who had the care of the sick not to waste so much time on the invisible dry and dead micro-organisms of the air, but to use more soap and water on their hands. Better still, try not to infect the hands or clothes in the sick room. There was a great deal of unnecessary handling of the patient and of infected articles by health officers, physicians and nurses. By paying more attention to contact infection, isolation in the family and hospital would be easier and more successful.

UNCINARIASIS IN FLORIDA.

DR. J. J. KINYOUN undertook an investigation of this disease to ascertain the prevalence of the infection and to see how far the average practitioner would be interested in such an investigation and the eradication of the

infection. He examined the children of two orphanages in Jacksonville. There were 39 cases of the disease in all. Careful examination of all the cases showed that the children were undeveloped and were of low mentality. He contended that the majority of cases were infected through the skin, and a few through the alimentary tract. Although the latter could not be altogether excluded, the avenues of infection were far less than that of the skin. He urged that a systematic study of the prevalence of the disease in the state be undertaken.

HIGH ALTITUDES IN TUBERCULOSIS.

PROFESSOR WEINZIRL, of New Mexico, said that his observations had led him to conclude that the great changes in the daily temperature observed at high altitudes acted as a stimulant on patients, and this was the main factor in the high dry climate cure of tuberculosis. That dryness, altitude and sunlight were important mainly because they were instrumental in producing these great temperature variations which insured cold nights and refreshing sleep, while the stimulation produced a better appetite, better digestion and the assimilation of food, thus affording the consumptive strength for combating the disease.

EFFECT OF HEATING UPON THE DETERMINATION OF LEUCOCYTES IN MILK.

PROF. H. L. RUSSELL and MR. CONRAD HOFFMANN, of Madison, Wis., contributed a joint paper on this subject. In the methods heretofore proposed for the determination of the cellular content of milk, an important factor influencing the accuracy of the determination had been overlooked. It was found that pasteurized milks almost invariably showed a higher cellular content than unheated milks. The authors found that the heating of the milk to 70° C. for fifteen minutes increased the cellular content from 1% to 30 above that of the unheated milk. This increase was found to be most marked between 60° and 70°, the temperature at which the fat globule clusters were broken up to form a more or less homogeneous emulsion. Many cellular elements were normally entangled in these clusters, and were liberated only when the latter were broken up. That these cells were so enmeshed was clearly shown by allowing whole milk to separate by gravity and then examining the cream and skimmed milk thus obtained. The cream showed a very high cellular content as contrasted with that of the skimmed milk. When milk was first heated, the number of cells found in the cream was materially diminished, and those in skimmed milk increased. It was evident that the cellular elements were carried up with the cream, and unless the milk was heated, a large number would be drawn off with the supernatant fluid, and thus escape enumeration. Examination of this fluid from unheated and heated samples gave much higher results for the former than the latter. Heating of the milk prior to centrifugalization permitted of increased accuracy, as was evidenced from a large series of duplicate determinations, which showed an average variation of only 2.7%. It was accordingly deemed advisable to heat all milks, prior to examination for leucocytes, high enough to destroy the fat globule clusters.

DETERMINATION OF INTESTINAL BACTERIA IN MILK.

DR. DANIEL D. JACKSON, of Brooklyn, said a demonstration of the value of the lactose bile medium for determining the presence of intestinal bacteria in water had led to its use in the determination of bacillus coli in milk. The restraining action of the bile salts on growths of the numerous other species of bacteria in milk admitted of its use, whereas the Smith solution gave entirely unsatisfactory results for this purpose, due to overgrowths and to the production of gas by species other than bacillus coli. Contrary to expectation, it was found that when other species were present, the bacillus coli did not increase in number in milk, but gradually decreased so that the extent of fecal contamination could be measured. The range was found to fall within the same dilutions as in water analysis. A clean milk, or one that had been pasteurized, rarely gave the test for bacillus coli in the $\frac{1}{10}$ dilution. A carelessly handled milk would give the test in the 1 cc. dilution. A contaminated milk would give positive tests in the $\frac{1}{10}$, 1 and 10 cc. dilutions.

DIPHTHERIA DIAGNOSIS.

DR. B. R. RICKARDS, of Boston, referred to some of the factors which enter into the bacteriological diagnosis of diphtheria. The question of types on which a positive report should be given was discussed from both the standpoint of diagnosis and release, the question being raised that in some cases greater leeway should not be allowed in release cultures owing to the clinical evidence of the organism. The personal element still entered into diagnosis to a certain extent, but could and should be reduced as much as possible. It was better for the diagnostician to have no knowledge of the clinical data of a case until the bacteriological diagnosis was made, owing to the mental bias which might otherwise be produced. In testing diphtheria organisms for virulence, varying results in the virulence of organisms isolated from the same culture had been noted and further work along this line was very necessary.

The writer believed that there should be greater uniformity in the various laboratories as to what forms should be considered as positive for diagnosis and release, and he emphasized the necessity of further experimental work on most of the points regarding the value of co-ordinating diphtheria diagnosis and diagnostic procedures in general, in order that it might be placed on a standard basis.

THE DIAGNOSIS OF RABIES.

DR. A. W. WILLIAMS, of New York City, said that three methods had been used in helping to establish the diagnosis of this disease. First, animal inoculation; second, sections for the presence of small-celled accumulations about the blood vessels and ganglion cells; third, sections and smears for the presence of the so-called Negri bodies. The second method had fallen largely into disuse, because the histological changes upon which its value depended had been shown to be nonspecific for rabies. The first method was used as a decisive test when results from the third method were doubtful. The results obtained from the use of the third method were as follows: (1) Negri bodies demonstrated, diagnosis rabies. (2) Negri bodies not demonstrated in fresh brains, diagnosis very probably not rabies. (3) Negri bodies not demonstrated in decomposing brains, diagnosis uncertain. (4) Suspicious bodies in fresh brains, diagnosis probably rabies.

The demonstration of the Negri bodies by smears was the most rapid and efficient method so far published. Improved technic had lessened the number of suspicious or uncertain cases.

He described the technic of the smear method at present in vogue in the research laboratories of the New York City Health Department.

MILK.

There was a symposium on this subject. PROF. E. B. VOORHEES, of New Brunswick, N. J., said the public

should realize that even at twelve cents good milk was the cheapest and best nourishment it was possible to buy. To produce pure milk at the present selling price in the big cities at a profit to the farmer was impossible. The most careless dairyman could not turn out even his inferior grade of milk for less than 4.7 cents a quart, while an average cost of production of five cents was the lowest practical rate. A very small additional expense in the price of milk was necessary to guarantee absolute purity and general quality of milk.

PROF. C. B. LANE said that the majority of dairymen would prefer to sell only the best milk procurable, if the public would pay for it, and he declared that the general public was quite willing to stand the higher rate. More stringent legislation was needed to procure permanent results. At the present time the man who added water to the milk was fined. Generally, the man who sold impure milk went scot-free, and this despite the fact that the latter was much the greater menace. He advised national laws modeled after the British statutes which permit a consumer to sue for damages a dealer who supplies him with impure milk.

DR. THOMAS DARLINGTON, of New York, advocated that each community should look after its own milk supply. He recommended systematic and constant inspection, in the first place, and, in the second, the prevention of the sale of any milk which was unwholesome and adulterated. Every dairy and every creamery supplying the city of New York had already been inspected. As for preventing the sale of unwholesome milk, he had only to mention that the Court of Special Sessions a day or two ago had 260 cases before it. Gastro-intestinal diseases had been markedly reduced since the proper inspection of milk had been enforced.

PROF. R. A. PEARSON, of Cornell University, discussed the protection of milk under five headings, namely, health of the cow; cleanliness of the cow and her surroundings; condition of the utensils in which the milk was handled; cleanliness of the employes, including their health, and the cooling and storing of the milk.

Speaking of the tuberculin test, he said that when farmers clearly understood its true value, they would want this test made. When they were shown by demonstration that which they failed to understand, they were anxious to have this test. Very many milk producers were honest and anxious to do what was right. They needed instruction. A campaign of education had been begun. It needed support. Every milk producer should have the opportunity to know the latest concerning his business, then many of them would make the desired improvements in their dairies, and the realization of ideal dairying would go hand in hand with the necessity of enforcing laws.

SOCIAL ETHICS AS INFLUENCED BY IMMIGRATION.

DR. PETER H. BRYCE, of Ottawa, Canada, said that immigrants were pouring into the United States and Canada at the enormous rate of a million and a half annually, and it was a grave question whether this tremendous influx of human flotsam and jetsam would be assimilated or continue a foreign mass and a menace to the nation. Invasion of foreign labor had driven American girls from mills and factories to a higher plane of employment. But the standard of intelligence was too low for foreign competition to seriously affect American mechanics. The mental status of immigrants to-day was higher than that of many years ago. Steamship companies forced by close competition expended enormous sums in new ships, deliberately seeking the immigrant as a means of making up their losses. This was one of the evils of the problem with which America and Canada had to contend.

The Mexican delegates reported that their country was constantly raising the barriers against undesirable immigrants, and urged that the United States government at Washington formulate a new code of laws that might be adopted also by Canada and Mexico.

TRACHOMA AND IMMIGRATION.

DR. AUGUSTIN CHACON, of Mexico City, said that immigrants to that republic had been the cause of an epidemic of this disease of such serious proportions that it would be absolutely necessary for the government to adopt radical measures for the protection of the country.

OPHTHALMIA NEONATORUM.

DR. F. PARK LEWIS, of Buffalo, presented this subject to the association. A committee was appointed to confer and co-operate with a like committee of the American Medical Association and with the committees appointed by other medical societies, to prevent this disease.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. Richard H. Lewis, of Raleigh, N. C.; First Vice-President, Dr. Gardner T. Swarts, of Providence, R. I.; Second Vice-President, Dr. Chas. J. Hodgetts, of Toronto, Ontario; Third Vice-President, Dr. Manuel Iglesias, of Mexico City; Treasurer, Dr. Frank W. Wright, of New Haven, Conn.; Secretary, Dr. Chas. O. Probst, of Columbus, Ohio.

Winnipeg, Manitoba, was selected as the place for holding the meeting in 1908.

Book Reviews.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. GLEASON, M.D., LL.D., Clinical Professor of Otology in the Medico-Chirugical College, Philadelphia. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

This adds another to our list of students' condensed manuals of the nose, throat and ear. In the process of condensing, some important subjects have especially suffered. Nasal polypus, for instance, is finished in two small pages, papilloma of the larynx in one, and acute tonsillitis, which is combined into one disease with peritonsillar abscess, in four. Although everything is in outline, other parts of the book suffer less from brevity. Gleason's name is widely associated with an operation for correcting septal deviations, and his original work in this direction makes this chapter valuable. In other subjects the opinions and practice of the author are interesting. He has not abandoned the use of the nasal saw. He says little about the dissection of deeply seated tonsils, and is conservative in the symptoms and treatment of adenoids. The pathologist may object to myxoma as a name for a polypus, and to mycosis for keratosis, and perhaps to the aborting of an acute tonsillitis by washing out the crypts, and the surgeon to the description of Killian's frontal sinus operation. The book is

convenient and attractive, and on the whole conservative and compact. It ends in a long list of prescriptions for both local and general treatment.

A Textbook of Clinical Anatomy. For Students and Practitioners. By DANIEL N. EISENDRATH, A.B., M.D., Adjunct Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Cook County Hospital, Chicago. Second edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

The second edition of this book appears in essentially the same form as the first. The text has been revised, and a certain number of new illustrations added. The idea of this work is altogether to be commended in its attempt to render practical the more theoretical study of descriptive anatomy. It may well be expanded far beyond its present scope, in relation particularly to the nervous system. The book has apparently been so favorably received that we hope its author may see fit to extend it further in subsequent editions.

Pediatrics. The Hygienic and Medical Treatment of Children. By THOMAS MORGAN ROTCH, M.D., Professor of Pediatrics, Harvard University. Fifth edition, rearranged and rewritten. Illustrated by numerous engravings in the text and by colored plates. Philadelphia and London: J. B. Lippincott Company.

This, the fifth edition of this well-known work, is, like each of its predecessors, an improvement on the one before. The book has been arranged, revised and brought well up to date. The divisions on "The Care of Premature Infants," "Feeding," "Diseases of the Gastro-enteric Tract" and "Diseases of the Nervous System," as well as several others of minor importance, have been rewritten. That on "Infant Feeding" is without question the most complete and satisfactory to be found in any textbook. That on the "Diseases of the Gastro-Enteric Tract" is based on the classification of these diseases recently adopted by the Department of Pediatrics in the Harvard Medical School. This classification is based on etiology, and is a decided advance on the old system. The various divisions, as in previous editions, are of rather unequal merit, that on the "Diseases of the Nervous System," in spite of having been rewritten, still being rather unsatisfactory. The divisions treating of the "Infant at Term" and "Normal Development" are still unique in their completeness and accuracy.

While it would be easy, as with every book, to criticise many minor points, it is difficult to find anything of importance with which to disagree. The treatment in general is rational and satisfactory. The book, as a whole, is of great merit. No one interested in the care and feeding of infants and in the diseases of infancy and childhood, can afford to be without it.

Insanity and Allied Neuroses. A Practical and Clinical Manual by GEO. H. SAVAGE, M.D., F.R.C.P., Late Physician and Superintendent of Bethlehem Royal Hospital, Lecturer on Mental Diseases at Guy's Hospital, etc., with the assistance of EDWIN GOODALL, M.D. (London), F.R.C.P., Medical Superintendent of the Cardiff City Hospital for Mental Diseases, etc. Pp. 662. Chicago: W. T. Keener & Co. 1907.

This book is a revised edition of Savage's individual work published originally in 1884. Although it is enlarged by seventy-six pages and otherwise revised, we cannot follow the authors in the claim that it contains all the essentials with which the medical student is required to be familiar now-a-days. In the endeavor to bring it into line with recent advances in psychiatry, four pages on dementia precox and manic-depressive insanity and various plates have been inserted, a scheme for the examination of cases of insanity, suspected or actual, is appended, a few chapters are partially rewritten or rearranged and various minor changes are made, but there still remains a flavor of bygone conceptions of the disease. Perhaps because of the difficulty of covering so large a field in a manual, some subjects of importance to the general physician are inadequately treated, the psycho-neuroses, for example, and confusional conditions receive scant attention as such. In spite of these deficiencies, there is much that is valuable and instructive in the book which is plainly the result of a rich and varied experience, utilized by a keen observer and a wise and resourceful clinician. A great many cases are introduced. They are interestingly described and should go far toward fixing the symptomatology of the disease in the student's mind. What is said also regarding certain borderland conditions, particularly those of moral defect, as well as the thorough and practical methods of treatment employed to meet acute conditions, is sound and helpful.

Manual of Obstetrics. By A. F. A. KING, A.M., M.D., LL.D., Professor of Obstetrics in the Medical Department of the George Washington University, Washington, D. C., and in the University of Vermont, etc. Tenth edition, revised and enlarged. Pp. 688, with 301 illustrations and 3 plates. Philadelphia and New York: Lea Brothers & Co. 1907.

Since the last edition in 1903, the book has been materially improved. The chapter on fecundation and nutrition of the embryo has been practically rewritten, many changes made in the chapters on pelvic deformity, cutting operations on the mother, mutilating operations on the child, placenta previa and puerperal septicemia. The chapter on toxemia gives the erroneous idea that the kidneys are primarily at fault, and nowhere is mentioned the frequent occurrence of pyelitis as a complication of pregnancy. Altogether it is an excellent manual and more than a manual. It is commendable to the practitioner, perhaps, to even a greater degree than to the student.

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SCIENTIFIC ACCURACY AND THE IMAGINATION.

LE BON, in his work "The Crowd, a Study of the Popular Mind," tells of a crew shipwrecked upon a raft, who kept eagerly scanning the horizon for a sail. After some days of watching one of them declared he saw a sail; unquestionably he saw something, and so desperate was the hope of his companions, that they all agreed with him the thing to which he pointed was a vessel which could rescue them. When they came upon it, however, they found it a tree which had evidently been uprooted in an equatorial storm. Tuke, in his admirable work on "The Influence of the Mind Upon the Body," relates how a boy who had on an afternoon seen a hanging, which had naturally much affected him, took a stroll along the country road in the evening of that day. He presently saw projected against the sky the gibbet of the afternoon and the criminal suspended from it. He ran home dreadfully frightened, to find that a cord dangling over the brim of his hat had been metamorphosed by his overwrought imagination into the aërial gallows.

These are instances — hundreds of the same sort might be cited — of delusions entertained by the unsophisticated, the highly emotional and the unscientific in which such aberrations are excusable enough. We who have been trained in science are so prone to consider such delusions the exclusive property of spiritualists, theosophists, geniuses and other highly imaginative people, that we feel distinctly humiliated when we learn that men of scientific reputations have entertained such psychic aberrations. As, for instance, when the telephone was invented, a lecturer who was giving a public exhibition of the apparatus clearly and repeatedly heard the notes of a trumpet which he had arranged to be played at the other end of the wire. Yet none of his audience could hear them; and for the very reason that the trumpeter had made a mistake in the day, and was not in his place at all. A very modern instance of "illusion caused by a species of autosuggestion based on preconceived ideas" is furnished by the n-rays which all competent men agree to-day never had any existence at all.

The Manchester *Guardian* related how these rays were discovered by Professor Blondlot, of Nancy, in 1903; he described them before the French Academy of Sciences, who gave him a gold medal for his discovery. During the next three years 176 original papers were published concerning them. Blondlot's observations, which were surely made in good faith, were in turn confirmed by such well-known physicists as Charpentier and Bequerel. These rays were said to be given off by almost all substances when in a state of strain; a tempered steel bar, a Nernst lamp, and even human nerve and muscle would emit them. The rather fanciful suggestion came that if a certain radiation were given off by our bodies, according to their degree of activity, our thoughts might possibly be photographed, "thoughts being only brain rays." The n-rays, stated French investigators, could be reduced or removed by anesthetics; for that matter, a tempered steel bar could be chloroformed into quiescence. Following upon this the invitation came naturally enough for us "to revise some of our notions on the difference between the inorganic and the organic." The n-rays were held to be even more wonderful than the x-rays or radium. Oddly enough, however, the n-rays did not, like the Röntgen rays, affect either the spectroscope or photographic plates. Admittedly they were rather baffling and elusive; but they had one physical effect upon which experimenters largely relied — their power to intensify the brightness of a light. A marked increase of luminosity was perceptible when an n-ray was directed upon a spark; or if a bar of tempered steel were held near a clock in a dark room, it was supposed to be possible to read the time.

In time Blondlot's experiments were confirmed and even extended outside France; yet many scientists utterly failed from the first to observe any of the phenomena described. English and German investigators became particularly skeptical, and rather absurdly a dispute arose, which

increased in bitterness and became quite akin to our own famous *row upon the Stanislaus*. Two camps were formed — the Latin and the Teutonic; and compliments increased in warmth as they lost in polish. The French imputed prejudice and animosity to their foreign critics; it was suggested that the rays could be distinguished only by the more sensitive and delicate brain of the Latin, while on the other hand nothing could be expected of the British brain, muddled as it is by the London fog, nor of the beer-befuddled German psychism. The matter in dispute threatened to place itself beyond the bounds of demonstration. Presently, however, the coolest French scientists gradually began to suspect that if no results could really be obtained in England and Germany, the explanation of the French experiments must be subjective and psychological rather than objective and physical. Finally, the *Revue Scientifique* settled the question in a very simple way. It was proposed that several small boxes of exactly similar appearance, some containing pieces of lead, others of tempered steel, should be sealed; and Blondlot or his assistants were to decide which of the boxes contained the active material. Blondlot refused this test, saying that "the phenomena were far too delicate for such a trial"; and he left "every one to form his own opinion on the n-rays, either from his own experiments or from his confidence in those of others." Thus was the dispute transferred from the realm of fact to that of opinion, experimentation ceased, and so far as science is concerned the incident was closed.

We repeat, such incidents as these are rather humiliating to the scientific temperament; fortunately they are extremely rare. We feel it pertinent to emphasize, however, that science is knowing; it should always be "certainty grounded upon demonstration"; it should always be self-poised and well judging; and its votaries should be absolutely free of autosuggestions and haphazard conjectures incapable of verification.

EMPLOYMENT FOR THE HANDICAPPED.

Very frequently, both in private and hospital practice, the physician is confronted with a patient unable from disability, the result of accident or disease, to return to his former occupation. Perhaps even a larger group is formed by those still able, for a time, to carry on their previous work, yet if they do so, it would mean a speedy return of the condition which has first brought them under the physician's care. What is to be done with such patients? The answer is, find them work of such a character that for it their particular disability forms no handicap. A one-legged man can do many varieties of hand work, and compete on equal terms with his more fortunate fellow worker. A cardiac case is competent to do light sedentary work with no injury to himself. Many more examples of this kind could be given, but it is not necessary, since on a moment's thought the situation is very obvious.

To find a vacancy in that particular kind of employment, for which the handicap of a given individual does not constitute a preventive disability would often prove a very difficult undertaking for the individual physician or charity worker. What is needed is some form of clearing house, in which the proper adaptation of these laborers to some sort of work can readily be made. About eighteen months ago the Charity Organization Society of the city of New York undertook this function through its Employment Bureau for the Handicapped. This has proven eminently successful in its working, for during the past eight months this bureau has placed an average of more than one out of two applicants, no mean record for any form of employment bureau. This does not mean that the employer has received a damaged article, for the bureau is careful to so select those they recommend that their disability does not hamper them for the particular work required, and this fact has been recognized quickly by those seeking workers. The range of activity of the bureau is indicated by the positions found for applicants, such as domestic servants, factory workers, janitors, messengers, country laborers, clerks, porters, watchmen, drivers, elevator men, guides, telegraph operators, needle workers, etc. The wages of these positions ranged from $3.00 to $20.00 per week, the average being $8.36.

That this bureau has proved of great usefulness in New York is not to be questioned. Moreover, in any large city there is an extensive field for such a bureau, and its organization would materially help the medical man whose labors bring him into contact with the middle and lower classes of the population. It is hoped that many other cities will imitate the plan now in operation in New York. It is a form of charity work highly to be commended for its practical usefulness.

MEDICAL NOTES.

Women Physicians in London. — Within the past year, according to the *New York Medical Journal*, eighteen students of the London School

of Medicine for Women passed the M.B. degree of the University of London, which is the highest degree obtainable in England. Four took the M.D. degree, and one the M.S. degree, which is the hardest examination given in surgery.

RETIREMENT OF PROFESSOR POLITZER. — Dr. Adam Politzer, for forty-six years director of the Vienna clinic for ear diseases and professor of otology in the university, has recently resigned his position. The occasion was made one of some formality. His last lecture was largely attended by physicians, by his present and former assistants, and also by representatives of foreign otological societies in Europe and America. Among other honors conferred upon him was honorary membership in the American Medical Association. Professor Politzer is succeeded by Professor Urbantschitsch, who up to this time has been director of the ear department of the Vienna polyclinic.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Nov. 13, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 46, scarlatina 28, typhoid fever 10, measles 25, tuberculosis 31, smallpox 0.

The death-rate of the reported deaths for the week ending Nov. 13, 1907, was 17.71.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 16, 1907, was 185, against 203 the corresponding week of last year, showing a decrease of 18 deaths and making the death-rate for the week 15.83. Of this number 98 were males and 87 were females; 177 were white and 8 colored; 124 were born in the United States, 52 in foreign countries and 9 unknown; 48 were of American parentage, 110 of foreign parentage and 27 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 52 cases and 1 death; scarlatina, 37 cases and 0 deaths; typhoid fever, 13 cases and 1 death; measles, 22 cases and 1 deaths; tuberculosis, 31 cases and 15 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 27, whooping cough 1, heart disease 20, bronchitis 2 and marasmus 3. There were 17 deaths from violent causes. The number of children who died under one year was 37; the number under five years, 53. The number of persons who died over sixty years of age was 50. The deaths in public institutions were 62.

There was 1 case and 0 death reported from cerebrospinal meningitis during the week.

NATIONAL HEALTH BUREAU. — A committee of one hundred of the American Health League held a conference at Yale University, New Haven, Nov. 17, in the interests of the extension of federal regulation of public health. Prof. Irving Fisher read a paper on the subject, "How to Double Working Efficiency by Diet." Dr. J. N. McCormack also spoke.

SOUTH BOSTON ANTITUBERCULOSIS SOCIETY.— The South Boston Antituberculosis Society, of which Dr. Edward A. Tracy is president, and Dr. William J. Sheehan, secretary, proposes to give practical talks on tuberculosis every month throughout the winter at the Municipal Court building, corner of Dorchester and Fourth streets, South Boston, at 8.15 P.M. The public is invited.

ENFORCEMENT OF LAW RELATING TO DISTRIBUTION OF DRUGS. — It is reported that four arrests have recently been made of men found distributing samples of a so-called new cough medicine in one of the sections of Boston. The last legislature passed a law prohibiting the distribution of drugs in this manner; these arrests are the first that have been made under the law.

ADVISORY COMMITTEE, NATIONAL ASSOCIATION FOR THE STUDY OF EPILEPSY. — Dr. E. E. Southard, Assistant Professor of Neuropathology at the Harvard Medical School, has been appointed a member of the Permanent Advisory Committee of the National Association for the Study of Epilepsy. The other members are Dr. L. Pierce Clark and Dr. Adolf Meyer. The objects of this committee are "to further the co-ordination of scientific and research work in epilepsy," and "to act as advisors for any workers in epilepsy who choose to apply to them."

OFFICERS, BOSTON MEDICAL LIBRARY.— At the annual meeting of the Boston Medical Library, held Tuesday, Nov. 12, 1907, the following officers were elected: President, Dr. George B. Shattuck; Vice-President, Dr. F. I. Knight; Treasurer, Dr. W. H. Prescott; Secretary, Dr. O. F. Wadsworth; Librarian, Dr. J. W. Farlow. Committee on Library and Finance, Dr. C. P. Putnam; Committee on Medical and Social Meetings, Dr. W. H. Smith; Committee on Membership and Elections, Dr. A. K. Stone.

Outdoor Camp for Tuberculosis. — The outdoor camp for tuberculosis at Mattapan, after a most successful season, will be forced to end its work unless certain financial support is forthcoming. A committee of patients has been formed with the object of soliciting further funds. The Boston Association for the Relief and Control of Tuberculosis has already maintained the camp three additional weeks, but six weeks still remain before the city authorities will be ready to take over the work. It is very important for many of the patients that the treatment be continued, and inasmuch as the amount necessary to maintain the camp is only $1,600, it seems altogether probable that it will be secured. Contributions may be sent to Mr. George S. Mumford, 4 Joy Street, Boston.

NEW YORK.

Inspection of Dairies. — A party of city health officials, including President Darlington, Health Officer Doty, and Dr. Russell Raynor, chief sanitary inspector, have been making a tour of inspection of the dairies in a large portion of the state, going as far as Oswego, and report the sanitary conditions as a rule much improved over those of last year.

Purity of Vaccine Virus. — Reports having again emanated from Brooklyn that school children had died from tetanus as the result of impure vaccine matter being employed by inspectors of the Health Department, President Darlington has come out in an emphatic denial, in which he attributes these strictures to the opponents of vaccination. "From time to time," he says, "such stories crop up, and after investigation they are found to be baseless. The virus used by the Board of Health is supplied by Dr. Huddleston, who is also secretary of the Academy of Medicine; and his name alone should convince the skeptics. Two hundred thousand school children are vaccinated annually, and the wounds, if not properly cared for, may become inoculated, just as any other wound might be. In every case the virus used is uniform and invariably pure, and our process of vaccination has exterminated small-pox in New York."

Death of Prof. Lucian M. Underwood. — Lucian M. Underwood, Torrey Professor of Botany in Columbia University, Chairman of the Board of Scientific Directors of the New York Botanical Garden in Bronx Park, and a Councillor of the New York Academy of Sciences, committed suicide at his country home at Redding, Conn., on Nov. 16, while suffering from melancholia. Prof. Nathaniel L. Britton, who was his predecessor in the chair of botany at Columbia and who is now director of the New York Botanical Garden, gives the following high estimate of his rank as a botanist: "In his work, Professor Underwood stood at the very head of his profession in the United States, and was one of the best known men in his line in the entire world."

A Verdict of $20,000. — At Flushing, Borough of Queens, on Nov. 13, in a suit for $75,000 damages against the General Chemical Company of Laurel Hill, Long Island, for the loss of his eyesight and disfigurement of his face, John L. Muller, an employee of the company, was awarded a verdict of $20,000 by the jury. The injuries, which were received in September last, were due to an escaping flow of sulphuric acid.

Work of the Seaside Hospital. — The annual meeting of St. John's Guild was held on Nov. 12. The reports showed that during the past summer, 36,816 mothers and children were carried on the trips of the floating hospital, and 7,077 patients treated at the Seaside Hospital at New Dorp, Staten Island. The average stay of the patients in the hospital was eleven days. The president, John W. Weed, announced that owing to the inability of the managers to raise a fund of $25,000 which it had been hoped would be subscribed for the purpose, it had been found impossible to keep the Seaside Hospital open during the winter this year. Last winter the work of the hospital was carried on with great success, 480 patients being treated during an average of thirty-one days, while there was constantly a waiting list of applicants. Duff G. Maynard exhibited stereopticon views showing the work of the floating hospital and of the Seaside Hospital in summer and in winter, and said that the greatest need in New York City at the present time was accommodations for convalescents. After the critical period of their illness, patients were sent out from the crowded hospitals in order to make room for others, and serious results often occurred in consequence of this premature discharge. In London, in a radius of two miles, were several hundred convalescent homes, while in the same radius in New York there were only three.

Conference of Charities and Correction. — The annual State Conference of Charities and Correction was held at Albany on Nov. 13 and 14, at which interesting reports and addresses were made by Dr. Edward B. Angell, neurologist to the City Hospital, Rochester, Dr. Adolph

Meyer, director of the Pathological Institute of the New York State Hospitals for the Insane, and others. In speaking of the saving of life which was gradually being effected, Dr. Angell called attention to the fact that while in New York City in 1876, out of 125,816 infants and young children, 3,632, or 28.86 per thousand, died from gastro-intestinal disease, in 1906, among 282,424 of the same class of subjects, only 3,354, or 11.87 per thousand, died from this cause. Dr. Meyer said that of the 27,102 patients now under the supervision of the State Commission in Lunacy, over one thousand had committed criminal offenses before their committal to institutions for the insane, and he recommended that every case of suspected mental disorder should be required to be reported to the commission in lunacy in the same way that infectious diseases are now reported to boards of health. In speaking of the lack of adequate accommodations for the insane in the state hospitals he stated that at present these institutions in the Metropolitan District, with 12,328 patients to care for, had a satisfactory capacity of less than nine thousand five hundred. Having complimented New York City in its efforts to provide for defective children in the public schools, Dr. Meyer said there still remained a deplorable number of children whose only salvation lay in removal from inadequate homes to schools where, under intelligent management, they could be brought to a certain degree of usefulness to themselves and others.

Current Literature.

MEDICAL RECORD.
OCT. 19, 1907.

1. BEARD, J. *On the Asymmetry of the Cycle of Life, Being the "End of the Thread."*
2. CUMSTON, C. G. *Ptosis of the Abdominal Viscera Surgically Considered.*
3. SMITH, O. C. *Advanced Age as a Contra-indication to Operation.*
4. FITCH, W. E. *Correction of Faulty Fashions in Dress an Important Factor in the Treatment of Diseases of Women.*
5. RICHARDS, J. H. *The W. Gill Wylie Appendix Operation.*

OCT. 26, 1907.

1. HARRIS, I. G. *Psychiatry and Its Importance.*
2. *EINHORN, M. *Experiences with the Bead Test for Ascertaining the Functions of the Digestive Apparatus.*
3. GOLDWATER, S. S. *Hospital Efficiency, Hospital Finances, and the Economics of Administration.*
4. WAINWRIGHT, J. W. *Some Examples of Chemical Syntheses as Applied in the Production of Remedial Agents.*
5. HAUBOLD, H. A. *Rupture of the Liver; Operation, Death.*

2. Einhorn describes the latest results obtained by him from the use of the bead test for ascertaining the digestive functions. He divides his cases into two groups: diseases of the digestive tract, and diseases of other organs. Sixty-eight cases in all constitute this series. He concludes that the bead test gives a true picture of the digestive condition, a worse state of digestion existing at the height of a disease than in convalescence. Results are influenced by personal idiosyncrasy. Marked digestive disturbance is found in barely half the cases of achylia gastrica, in delirium tremens, in grave cases of gastro-enteritis, and in typhoid fever. Diminution of starch digestion is often found, while disturbance of proteid digestion is rare. In purely nervous affections, pure colitis and constipation, digestion is good.

NEW YORK MEDICAL JOURNAL.
OCT. 26, 1907.

1. WIENER, J. *The Diagnosis and Treatment of Prostatic Hypertrophy.*
2. LYNCH, J. M. *Fissure of the Anus.*
3. BAKETEL, H. S. *Some Facts Anent the Personnel of the Army Medical Department.*
4. HOLLMANN, H. T. *Diseases of the Eye, Ear, Nose and Throat among Persons Afflicted with Leprosy.*
5. WACHENHEIM, F. L. *Late Secondary Hemorrhage Following the Removal of Adenoids.*
6. HOLLADAY, G. G. *Injuries to the Head (Brain).*
7. CHRISTIAN, H. M. *Hematuria of Renal Origin.*
8. *ROSENBERG, L. *Some Experience with Tuberculin.*

8. Rosenberg considers that with the aid of tuberculin (Koch's old tuberculin) judiciously administered he has been able to obtain somewhat better results than with the ordinary methods employed, particularly in those cases advanced beyond the first stage of the disease.

[R. I. L.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
OCT. 26, 1907.

1. WOOD, H. C., JR. *The Place of Pharmacology in Medicine.*
2. REMINGTON, J. P. *The Pharmacopeial Versus the Proprietary Materia Medica.*
3. *HALLBERG, C. S. N. *Pharmacists and Physicians and the Food and Drugs Act.*
4. DOCK, G. *Medical Treatment of Cholelithiasis.*
5. COTTON, A. C. *Scarlatina and Dukes' Disease.*
6. *HARBITZ, F., AND SCHEEL, O. *Epidemic Acute Poliomyelitis in Norway in the Years 1903 to 1906.*
7. JACKSON, C. *Gastroscopy.*
8. POSEY, W. C. *Congenital Squint.*
9. NERES, F. E. *Voltaic Turbinal Puncture for the Relief of Intumescent and Hypertrophic Rhinitis.*

3. Hallberg recommends the following modifications of the Federal Food and Drugs Act in all state legislation: (1) Exemption from the label requirements for the articles of the United States Pharmacopeia, and the National Formulary, and physicians' prescriptions. The federal act now requires that all medicines containing alcohol and a number of potent and habit forming drugs, shall show on the label the amount of such drug contained. The articles of the United States Pharmacopeia and National Formulary necessarily conform to known standards. Physicians' prescriptions are not usually subject to interstate commerce and are of a confidential character. (2) Articles of the United States Pharmacopeia and National Formulary must conform to the requirements, although if feasible or desirable, the preparations may differ in color or flavor from the National Formulary formula if so stated on the label. Now under the federal law articles of United States Pharmacopeia and National Formulary may differ from the requirements if so stated on the label.

6. In Norway, from 1903 to 1905, there were 1,053 cases of acute poliomyelitis with 145 deaths. These cases have occurred often in small epidemics, and several cases have occurred in the same family. However, in the rather numerous cases in Christiania in 1905 and 1906, careful investigations did not demonstrate any connection between the cases. From the various epidemics the writers examined 19 cases post-mortem. There were no essential lesions outside of the nervous system. The inflammation apparently commences in the pia mater (often only demonstrable microscopically) with a probable simultaneous infection of the cerebrospinal fluid, and extends to the cord along the vessels. The pathological changes are always more extensive than would be suggested from the clinical signs. Even in the mild cases

with a very limited paralysis, involvement to some extent of the whole cord, and usually slightly of the basal ganglia and the cortex, was found. Certain cases of Landry's paralysis, of myelitis and probably of encephalitis should pathologically and etiologically be placed in the same class with ordinary acute poliomyelitis. The writers were unable to find any anatomical evidence to show relationship between acute poliomyelitis and acute multiple neuritis or epidemic cerebrospinal meningitis. They believe poliomyelitis is due to a specific virus. In three of their cases they found in the cerebrospinal fluid a diplococcus or tetracoccus similar to the organism previously described by Geirvold as the causal organism of this disease. This organism differs from the meningococcus of Weichselbaum. [R. I. L.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.
OCTOBER, 1907.

1. OSLER, W. *On Telangiectasis Circumscripta Universalis.*
2. *CALVERT, W. J. *Position of the Heart in Pericarditis with Effusion.*
3. POHLMAN, A. G. *The Fetal Circulation through the Heart.*
4. *EMERSON, C. P. *Two Cases of Typhoid Fever with Interesting Blood Crises.*
5. DUNTON, W. R. *Mrs. Packard and Her Influence upon Laws for the Commitment of the Insane.*

2. Calvert hardened the cadavers of two individuals, who at the time of death had pericardial effusions. From transverse sections he concludes that the position of the heart in pericarditis depends on the size of the heart, which in turn depends on the stage of compensation. In normal compensation the heart is in relatively normal position. In failing compensation the heart becomes progressively smaller and more posterior. The apex is in normal position or displaced backwards and slightly to the right.

4. Emerson reports two cases who during the course of typhoid fever developed a very severe anemia with very many blasts, a very high leucocytosis (50,000 to 80,000) with 70% to 90% of polynuclear neutrophiles and a fairly large number of typical neutrophilic myelocytes. One case had a rather insignificant intestinal hemorrhage, followed by a period of hypothermia for three days. The other case apparently had a considerable hemorrhage. Both cases were fatal. Only one autopsy was permitted. In this case the bone marrow was red and contained typhoid bacilli. [R. I. L.]

THE LANCET.
OCT. 26, 1907.

1. *MACKENZIE, H. *Mobility of the Kidneys.*
2. DAWSON, B. *Roentgen Rays as an Aid to the Diagnosis of Stricture of the Oesophagus.*
3. GRIFFITH, T. W. *Case of Combined Disease of the Mitral, Aortic and Tricuspid Valves of the Heart, in Which the Patient was under Hospital Observation for Twenty-five Years.*
4. *RAW, N. *The Compulsory Notification of Tuberculosis.*
5. WILLAN, R. J. *The Treatment Before and After Operation of 88 Consecutive Successful Prostatectomies by Freyer's Method.*
6. JAMES, R. R. *Two Cases of Acute Spreading Gangrene, with a Note on Their Bacteriology.*
7. HANN, R. G. *A Case of Erythromelalgia.*

1. Hector Mackenzie has made an examination of the abdomen of nearly 4,000 people in regard to mobility of the kidneys. He is of the opinion that minor degrees of mobility are of trivial importance. Two thousand eight hundred and one females of all ages were examined; in 16% the kidneys were palpable only, and in 18.4% they were not only palpable but freely movable. In 1,067 males of all ages there were 2.3% of palpable kidneys and 1% of movable kidneys. Under twelve years he has met with no case in which the kidneys were movable. His figures agree very closely with those of Glénard, who examined 4,215 patients. He believes that the influence of child-bearing on the production of movable kidney is not very great, and that the influence of tight lacing as a cause of this condition has been exaggerated. Sex seems to be the most important factor, and absorption of the perirenal fat another important influence. Out of 515 cases with the high degree of mobility no fewer than 411 had no symptoms at all. As to treatment, a spring truss properly applied he has found more effective than belts and other cumbersome forms of apparatus. The improvement of general condition is very necessary. He believes that a long, careful medical treatment should be given before operative measures are resorted to.

4. Raw recommends the following measures for the administrative control of tuberculosis: (1) municipal dispensaries with notification of all "open" cases; (2) health visitors; (3) regulations against tuberculous persons handling food; (4) inspection of milk and meat; (5) improved dwellings and ventilation; (6) destruction of expectoration; (7) general sanitary measures; (8) disinfection of houses after death of tuberculous patients; (9) inspection of hotels and boarding houses; (10) separation of children from consumptives, with compulsory notification if necessary; (11) isolation of advanced cases; (12) hospitals for treatment; (13) voluntary notification. [J. B. H.]

BRITISH MEDICAL JOURNAL.
OCT. 26, 1907.

1. PAUL, F. T. *Address on Some Experiences in Abdominal Surgery.*
2. ROBSON, A. W. M. *On Cholecystectomy; the Indications and Contra-indications for Its Performance.*
3. FULLERTON, A. *Anastomosis between the Common Bile Duct and the Duodenum for Obstructive Jaundice.*
4. *RUSSELL, J. S. R. *Discussion on the Indications for Operation in Cases of Intracranial Tumor.*
5. ROBB, A. G. *Some Observations on the Recent Outbreak of Cerebrospinal Fever in Belfast.*
6. *RIVIERE, C. *Tuberculin Treatment of Tuberculosis in Children.*
7. *OSLER, W. *Discussion on the Diagnosis of Acute Pancreatitis.*
8. *NORTHRUP, W. P. *Open-Air Roof Wards on Metropolitan Hospitals.*
9. CLARKE, J. M. *A Case of Lymphadenoma Treated by X-rays.*
10. WEST, S. *Some Remarks on the Diagnosis and Treatment of Pericarditis.*
11. TYSON, W. J. *Some Remarks on the Prevention of Appendicitis.*
12. LUFF, A. P. *Discussion on Rheumatoid Arthritis and the Morbid Conditions which Stimulate It, with Especial Reference to Pathology and Treatment.*
13. ATKINSON, T. R. *A Case of Wasp Sting.*
14. NIAS, J. B. *The Removal of Foreign Bodies from the Hand or Foot.*
15. MOORHEAD, E. S. *Second Attack of Typhoid Fever: Perforation; Laparotomy; Death.*

4. Russell gives a paper with numerous illustrative cases on the indications for operation in cases of intracranial tumor. Operation may be recommended in some cases in the hope of effecting a cure; in these certain considerations influence this question, viz., (1) whether or not accurate localization of the tumor is possible; (2) although the tumor may be accurately localized, it may be in such a position as to render the chance of its successful removal very slight; (3) the tumor may be of such a nature, malignant or otherwise, that a complete cure is not to be expected. In operations to relieve the symptoms and prolong life the indications for and against trephining must be carefully weighed. The importance of saving sight by relieving intracranial pressure can hardly be overestimated.

6. Riviere gives the results of tuberculin treatment of tuberculosis in children. He divides these cases into two groups: strictly localized tuberculosis, and tuberculosis not strictly localized, that is, accompanied by symptoms of general disturbance. The success or non-success of tuberculin treatment resolves itself into a question of doses. He believes that many disappointing results are to be accounted for by overdosage. He now considers 1-12000 to 1-8000 mgm. suitable for a child of one year, 1-4000 for a child of five years, and 1-3000 for children of ten to twelve years. The effect on the opsonic index

should be carefully watched, and, a convenient dose being fixed, it is best given every two weeks. He considers it very important to watch the opsonic index as a guide to treatment. In cases where this is impossible, clinical evidence may take its place. For localized tuberculosis he has found tuberculin in suitable doses an almost certain remedy. The improvement is threefold, consisting in a change in the general health, a marked mental improvement and a tendency to local healing. Among his cases of this class he has treated tuberculous dactylitis, superficial abscess, tuberculous glands and tuberculous joint diseases. Tuberculous glands do well, but in prolonged treatment his experience with joint cases has been too short and scanty to give conclusions. Cases of tuberculosis accompanied by symptoms, such as phthisis and tuberculous peritonitis, are certainly benefited by tuberculin in most instances. He urges a wider use of tuberculin in the treatment of tuberculosis in children and believes that poor results are generally due to faulty administration.

7. Osler recognizes two groups of cases of acute pancreatitis, a first in which there is enlargement of the gland, often with hemorrhage; a second in which the gland is in a state of suppuration or necrosis. There are three main causes of acute pancreatitis: (1) mechanical, as a calculus leading to bacterial infection; (2) chemical, as bile, gastric juice or duodenal contents entering the pancreatic duct; (3) most important of all, an infective cause. There were gallstones in nearly one half of his cases of acute pancreatitis. Diagnosis is often impossible. The history is of the greatest importance, especially one of alcoholism in middle-aged men, or a record of gallstones, and then sudden severe symptoms. Ninety per cent of his cases not operated on died, and of those operated upon more than 50% recovered.

8. Northrup gives an interesting description of the open-air roof ward on the Presbyterian Hospital in New York City. He discusses its construction and appointments and its functions and gives his general impression of its usefulness after experience. It is to be hoped that this movement will begin a new era in hospital construction. The great thing to be borne in mind in these open-air wards is that the patient must be made comfortable.

[J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 37. SEPT. 12, 1907.

1. HERXHEIMER, K. *Contribution to the Treatment of Acne Vulgaris.*
2. *ARNING AND KLEIN, C. *A Practical Technic for the Detection of the Spirocheta Pallida.*
3. *BOELLKE, O. *Wright's Opsonins in Acute Infectious Diseases.*
4. BORUTTAU, H. *Action of Iodglidine in Animals and Human Beings.*
5. *HESSE, F. *Complications after Spinal Anesthesia.*
6. FRIEDLANDER, J. *Habitual Abuse of Chloroform.*
7. *TURAN, F. *Treatment of Chronic Endometritis.*
8. MULERT. *A Case of Rupture of the Uterus During Labor.*

2. Arning and Klein, in reporting the results of their work in the examination of patients in the Hamburg Hospital for venereal diseases, say that they have convinced themselves that the spirocheta pallida is the cause of syphilis, and is pathognomic for the disease when discovered in suspected lesions. The search for this organism should be made a routine measure in hospital work. The authors found the most satisfactory staining method that of Giemsa as modified by Preiss. One hundred and forty cases of clinical chancres were examined, 112 of these being of the male genitals. In only four instances were the spirochetes not found, the reason in two of the cases being that the ulcers had already undergone prolonged local treatment with mercury. In 14 primary lesions of the female genitals the spirochetes were found every time. Only ten failures are reported in 179 cases of syphilitic plaques and patches of various sorts. Seventeen cases of actual or suspected congenital syphilis were examined, and in every instance in which clinical syphilis existed the spirochetes were found. In 32 cases in which the diagnosis was clinically uncertain, the spirochetes were found seven times, and the subsequent clinical course was that of syphilis. Eighteen cases gave a negative result and were treated as soft chancres, but in two of these the occurrence of secondary symptoms showed that the search for spirochetes had not been sufficiently prolonged. In the remaining 7 cases treatment by mercury had already been given, and no spirochetes were found. In 93 cases the clinical picture was that of soft chancre and the examination was made as a species of control; in two of these the spirocheta was found, but the others, in which a very careful search failed to detect the micro-organism, ran the course of a non-syphilitic affection.

3. Boellke thinks he was able, by specific inoculation, to raise the opsonic index in fourteen pneumonias and one empyema. The latter showed pneumococci and streptococci in the aspirated pus. Six days after the first inoculation there were no bacteria in the aspirated pus, and patient was well by the twelfth day; aspiration was the only surgical procedure.

5. Hesse warns against the use of spinal anesthesia unless general anesthesia is decidedly contra-indicated, and says it should never be used for operations above the umbilicus. In his experience of 60 cases he encountered one collapse from the introduction of the needle, annoying symptoms in 7. One case had intense pain in the right arm and headache, the pain spreading to the intercostal spaces; two months after the pain and other sensory disturbances, with exaggerated reflexes, persisted unchanged. He employed tropacocain 0.05. gm., diluted in all cases with 5 cc. of the patients' cerebrospinal fluid.

7. Turan describes the manner in which he has successfully applied Bier's congestion treatment in chronic catarrhal endometritis. He uses a fenestrated intra-uterine catheter, having on its stem a projecting shoulder to keep it from entering too far. The catheter is connected by rubber tubing to a Y-shaped coupling, by means of which it communicates with a mercury manometer and with a suction syringe. A packing of gauze about the shoulder of the catheter prevents the entrance of air into the uterus. Suction is applied by means of the syringe, and negative pressure maintained for a period of from twenty minutes to an hour by clamping the rubber tube. Experience has shown that very little leakage takes place even though the patient walks about during the application. The most suitable pressure has been found to be between 20 and 30 mm. of mercury. The treatment is painless and should be repeated every day for fifteen to twenty-nine sessions. In old chronic cases the results were eminently satisfactory, but recent or acute inflammation contra-indicates this treatment. [L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 37. SEPT. 10, 1907.

1. MÜNZER, E. *A New Apparatus for Measuring Blood Pressure. Remarks on Sphygmo-Turgography.*
2. KRÜGER. *Torsion of the Appendices Epiploicæ.*
3. *JAHRMÄRKER. *Pachymeningitis Interna Hemorrhagica.*
4. NELIR, E. *Pathogenesis of Hirschsprung's Disease (Congenital Dilatation of the Colon).*
5. FEIGL, G. *A New Method of Treatment for Bubo.*
6. DENCKS, G. *So-Called Acquired Lymphangioma of the Neck.*
7. GRIMME. *A Case of Typhoid, with the Clinical Picture of Weil's Disease.*
8. BRINK. *A Case of Cesarian Section, Necessitated by Spontaneous Fixation of the Uterus after a Previous Delivery.*
9. BOESL. *Methylatropinum Bromatum in Eclampsia of Children.*
10. BINDER. *A Case of Spina Bifida Occulta.*
11. RAHONER. A *Case of Carcinoma of the Stomach with Metastases in the Femur.*
12. DESSAUER, F. *Protection for Physician and Patient against the Harmful Action of X-Rays.*

3. Jahrmärker describes 2 cases, one in a man of sixty-three, the other in a woman of sixty, both of whom rather suddenly developed symptoms of senile dementia accompanied by slowly increasing paralysis of the limbs and face muscles, in the first hemiplegic, in the second paraplegic. The paralyses were accompanied by premonitory symptoms (local spasms, tremors, etc.). This

condition slowly merged into one of complete paralysis and unconsciousness, followed by death. In both cases a diagnosis of pachymeningitis interna hemorrhagica was made, because of the lack of history of trauma, the general marked arteriosclerosis, the slowness of the march of symptoms, and the paralyses combined with symptoms of cortical irritation. The autopsies supported the diagnoses. In the first case (*i. e.*, hemiplegic) there was a one-sided hemorrhagic pachymeningitis. In the second case the process extended over the whole surface of both hemispheres. [R. D.]

Berliner Klinische Wochenschrift. No. 37.
Sept. 16, 1907.

1. Jürgens. *The Position of Paratyphoid in the Typhoid Group.*
2. Rössle, R. *Are Infusions of Salt Solution Dangerous?*
3. *Engel and Bauer. *Experiences with Pirquet's Tuberculin Reaction.*
4. Maas, O. *Multiple Tumors of the Central Nervous System.*
5. *Ruhemann, J. *The Epidemic Importance of the Influenza Bacillus.*

3. Engel and Bauer observed a series of 48 infants who had received tuberculin injections. In 6 cases, which were tuberculous, the Pirquet reaction was present (*i. e.*, a papule at the point of injection); in 5 cases without demonstrable tuberculosis the reaction was also positive. Out of a series of 280 children of more advanced years, all those with a clinically evident tuberculosis gave a Pirquet reaction. Thus it appears that the reaction is more reliable in children than in infants. The authors find that in comparison with the ordinary tuberculin test, *i. e.*, a general reaction, this local reaction is not to be depended on.

5. Ruhemann has observed that of late years the bacillus of Pfeiffer is less often found in association with clinical influenza. He attributes this to the fact that many people have acquired a partial immunity to the bacillus by repeated attacks of influenza. Also he claims that since the first great epidemics, there has been a constant diminution in the virulence of the organism. [R. D.]

Deutsches Archiv für Klinische Medizin, Bd. 90.
Hft. 3–4, 1907.

1. *Geigel, R. *Metallic Sounds in Physical Diagnosis.*
2. *Köster, G. *Temporary Absence of the Patellar Reflexes in Hysteria.*
3. *Uffenheimer, A. *Nodular Lung (Knötchenlunge).*
4. *Klieneberger, C. *Studies of Coli Agglutinins with Especial Reference to the Clinical Value of Coli Agglutination.*
5. *Bickhardt, J., and Schümann, E. *Aneurism of the Hepatic Artery.*
6. *Prym, O. *The Meaning or Clinical Diagnosis of a Stomach Contents in Layers.*
7. *Türk, W. *A Case of Yeast Infection (Saccharomykosis) of the Meninges.*
8. *Porges, O., and Pribram, E. *Orthostatic Albuminuria.*
9. Kollarits, J. *Galvanic Muscle Contraction in Various Diseases.*
10. Mayer, A. *Metabolism in the Phthisical.*
11. Mayer, A. *The Formation and Excretion of Oxalic Acid in Infectious Diseases.*
12. *Groedel, III, F. M. *The Topography of the Normal Stomach.*

1. Geigel discusses in this paper the physical explanation of the metallic sounds produced in percussion, and the various theories which have been advanced to explain this phenomenon in thoracic percussion. He believes it is due to a discontinuous vibration of an elastic body, which produces high overtones, considerably above the fundamental tone. This condition is present in an air-containing cavity with a tense wall, which can be put in vibration at some point.

2. In most cases of hysteria, the patellar reflexes are increased. An exception to this rule is the case published here by Köster, in which there was a temporary absence of these reflexes. Other cases have been reported, and these are discussed by the author. Most of these are undoubtedly cases of hysteria, and the absence of the knee jerks cannot be attributed to organic lesion of the spinal cord. It is much more common to have these reflexes absent in organic diseases, but the diagnosis of organic disease is not justified merely on the absence of knee jerks. Köster discusses the probable explanation of the absent reflexes, but arrives at no very satisfactory explanation of the phenomenon. In most of the cases in which this combination has existed, there has been muscle weakness, but the lack of muscular tone is not sufficient to explain the absent knee jerks, since in other conditions with marked loss of muscle tone the knee jerks may remain very active, and even in hysterical cases with the same symptoms (astasia-abasia) as the one reported by the author, the knee jerks are more often present.

3. The "nodular lung" is a term used by Uffenheimer to describe certain small nodules resembling miliary tubercles in the lungs of guinea pigs which have been inoculated with various organic substances. These nodules do not have the histological structure of tubercles, and inoculation of them into animals does not produce tuberculosis. They appear to be an excessive development of lymphoid nodules, with which is associated a considerable local eosinophilia in many cases. The interest in these nodules is in the belief of the author that their formation is associated with, or is an expression of some acquired immunity; in this particular case an immunity to tubercle bacilli, since in his cases they were produced by the injection of blood and glands from guinea pigs, recently inoculated with tubercle bacilli. Definite proof of this theory cannot be given, but the presence of the nodules seems to be associated with a resistance to tuberculosis.

4. Klieneberger has made an extensive study of the agglutinins for colon bacilli, which are present in normal serum, and the serum of people suffering from various infections with colon bacilli. Under normal conditions one finds somewhat high agglutination values for colon bacilli, and different strains of bacilli are differently agglutinated by the serum of the same individual. Serum from cases with colon bacilli infection very frequently agglutinates the infecting strain of bacteria, but not always, and the highest agglutination values occur in the serum of cases with fever associated with the infection. The determination of a colon bacillus infection by means of the agglutination test must always be controlled by comparative test with a normal serum, and even under these conditions no very definite conclusions can be drawn from strongly positive reactions; consequently the agglutination of colon bacilli with serum of patients is of comparatively little value to the clinician.

5. This is a report of a single case with autopsy of a quite rare condition. The authors have collected 37 similar cases, and attempt to construct a diagnostic symptomatology. The most characteristic features of it are pain in the right upper quadrant of the abdomen, associated with icterus, hemorrhage into the digestive tract and palpable tumor unassociated with liver-edge or stomach. Diagnosis under these conditions, however, would hardly be possible except when there is associated pulsation of the tumor, and a systolic murmur over it. Even under these conditions it is not likely that the condition will often be diagnosed.

6. The veterinarians have long recognized that food in the stomach of animals was not evenly mixed but was arranged more or less definitely in layers. Prym here shows that the same is true in dogs for a liquid meal of thin consistence. In man the same condition is suggested by the finding of a different degree of acidity in two portions of stomach content removed simultaneously by means of a two-way tube with openings at different levels. This being the case there is much chance for variable results from the analysis of stomach contents after the usual test meals depending on the portion removed. This is true for the Ewald-Boas and the Sahli test meals, and there is even more chance for error in the Mathieu method of determining the total residue. These facts render the finding of minor variations in analyses of stomach contents as of doubtful value in diagnosis, and emphasize the great care that should be exercised in drawing conclusions from the results of various methods of gastric analysis.

7. Türk gives a very full account of an almost unique case. There is a careful description of the cultural characteristics of the yeast isolated from the case.

8. Porges and Pribram contribute a study of two cases of orthostatic albuminuria in which they tested the influence of posture ingestion of food, drugs affecting the general circulation (digitalis, strychnine, chloralhydrate) and those acting on the renal vessels (caffein, diuretin), cathartics, etc., on the excretion of albumin. As a result of these studies they conclude that the condition is the result of local disturbances of the renal circulation, probably following an arterial spasm that obstructs the circulation through the kidneys.

12. By means of ingested bismuth and the orthodiagraph, Groedel has made extensive studies of the position and shape of the full stomach. In the first place this is dependent on the position of the body. In the standing position the more usual shape is that of a siphon, while lying down we have a sandal form. The stomach rotates in change of body posture, on an axis running from pylorus to cardia. Many variations in form and position occur, depending on the shape of the body, abdominal contents, the relaxation of the abdominal wall and the position and degree of filling of the intestine.

[H. A. C.]

Miscellany.

THE AMERICAN NATIONAL RED CROSS.

WE have received from Surgeon-General O'Reilly of the United States Army, the following communication with the accompanying resolutions.

As a member of the Executive Committee of the American National Red Cross, I have been requested to forward to you the enclosed resolutions with the hope that you may find it expedient to kindly print them in your publication and lend what assistance you can in discharging the international duty assumed by this country in agreement with all the great powers, of protecting the Red Cross name and insignia from any use save that agreed upon by the Treaty of Geneva.

In cases where the name and insignia are used as trademarks, the suggestion would be of value that their use should be gradually eliminated within the next three or four years, in conformity with the provisions of the treaty that the prohibition of the use of the emblem and name should be enforced not later than five years after the treaty went into effect.

RESOLUTIONS ADOPTED BY THE EXECUTIVE COMMITTEE, OCT. 18, 1907.

Whereas, by international agreement in the Treaty of Geneva, 1864, and the revised Treaty of Geneva, 1906, "the emblem of the Red Cross on a white ground and the words Red Cross or Geneva Cross" were adopted to designate the *personnel* protected by this Convention, and

Whereas, the Treaty further provides (Article 23) that "the emblem of the Red Cross on a white ground and the words Red Cross or Geneva Cross can only be used whether in time of peace or war, to protect or designate sanitary formations and establishments, the *personnel* and material protected by this Convention," and

Whereas, the American National Red Cross comes under the regulations of this treaty according to Article 10, "volunteer aid societies, duly recognized and authorized by their respective governments," such recognition and authority having been conferred upon the American National Red Cross in the charter granted by Congress, Jan. 5, 1905, Sect. 2, "The corporation hereby created is designated as the organization which is authorized to act in matters of relief under said treaty," and, furthermore,

Whereas, in the Revised Treaty of Geneva, 1906, in Article 27, it is provided that "the signatory powers whose legislation should not now be adequate, engage to take or recommend to their legislatures such measures as may be necessary to prevent the use by private persons or by societies other than those upon which this convention confers the right thereto of the emblem or name of the Red Cross or Geneva Cross."

Be it resolved, That the Executive Committee of the American National Red Cross requests that all hospitals, health departments and like institutions kindly desist from the use of the Red Cross created for the special purpose mentioned above, and suggests that for it should be substituted some other insignia, such as a green St. Andrew's Cross on a white ground, to be named the "Hospital Cross," and used to designate all hospitals (save such as are under the medical departments of the army and navy and the authorized volunteer aid society of the government), all health departments and like institutions, and, further,

Be it resolved, That the Executive Committee of the American National Red Cross likewise requests that all individuals or business firms and corporations who employ the Geneva Red Cross for business purposes kindly desist from such use, gradually withdrawing its employment and substituting some other distinguishing mark.

THE OPERATIVE TREATMENT OF CANCER.

PROF. E. GOLDMANN, of Freiburg, in the course of an address on "Malignant Disease" delivered before a meeting convened by the Surgical Section of the Royal Society of Medicine, held on Oct. 23, commented on the defensive substances manufactured in the human body against malignant tumors. Present knowledge enabled the inference to be made that the body's first line of defence was established on the boundary of an invading growth. That explained those cases in which cancers of slow growth and long duration had been removed with the result that the patients have returned in a short time with recurrences of an alarming nature which have grown rapidly. It appeared to Professor Goldmann that in such cases the surgeon's knife had done harm, for by removing the growth he has destroyed the barrier of defence, which the body has carefully raised up during the long period of the tumor's existence. He thought that the time had come to consider whether stereotyped surgical interference was the only remedy of the future for malignant growths. — *Lancet.*

Correspondence.

LETTER FROM SAN FRANCISCO.

The Plague Situation in San Francisco.

San Francisco, Nov. 12, 1907.

Mr. Editor: I am enclosing you a report to date on the plague situation in San Francisco.

The first authentic case in this epidemic was verified May 27 and no subsequent case was noted until the middle of August when within a few days five or six cases were found in the City and County Hospital. The situation seemed serious because these cases developed in widely scattered parts of the city, but chiefly along the water front in the miserable shanties which an inefficient city government allowed to remain occupied in spite of adequate quarters for the homeless in sanitary and well constructed camps. It is to the filth and lack of sewer connections of these irregular camps that we attribute also our unprecedented epidemic of typhoid fever a year ago.

Up to Nov. 9, 90 verified cases of plague had been reported with 57 deaths.

Our present mayor — a graduate in medicine as well as in law — was keenly alive to the situation, and within a few days of the matter being brought to his attention, he had reorganized the Department of Health from top to bottom and asked the Federal Government for the further help of its Marine-Hospital services. Eight years ago when we had a similar but smaller outbreak, Dr. Rupert Blue was sent to us, and to his efficiency as a sanitarian we owe the thorough cleaning out of the disease. He remained with us until every cellar and underground passage in Chinatown had been cleaned up and cemented, hordes of rats killed, until the disease was no longer found among them and until no new case among human beings had been reported for a year. It was with considerable satisfaction that we heard promptly that Dr. Blue was on his way here again to assume charge of the situation with our local Board of Health. The first epidemic, it it can be called rightly by that name, resulted in about twenty-five people getting the disease, only one of whom was white — the remainder being Japanese or Chinese.

In the present epidemic only one or two Chinamen have been afflicted, the remainder being chiefly the Latin races who are segregated along the water front. It is needless to say that nothing has been left undone to stamp out the disease. The irregular camps have been vacated and destroyed and stables and cellars everywhere have been rigidly overhauled. Rats are being trapped and poisoned by the thousand and it is gratifying to note that fewer and fewer plague-infected rats are being found in proportion to the others. The number of cases and suspects reported is also diminishing, and we hope to have a clean bill of health before long. In the meantime an isolation hospital has been built and surrounded by a corrugated iron fence buried two feet in the ground. Here the clinically diagnosed cases are taken at once. They are cared for by a staff of physicians, and every case receives attention from the resident physician and the representative of the Marine-Hospital Service each day. The nursing is done by a staff from the City Hospital. The Board of Health provides a suitable laboratory where two bacteriologists with a number of medical assistants check up the material brought in for investigation. An incineratory on the ground has been provided for and nothing leaves the enclosure in the way of waste product or sewage.

It might be interesting to the medical profession throughout the country to refer briefly at this time to the need in San Francisco of a school for the study of tropical diseases. It is no uncommon thing for us to have in the wards of our public hospital cases of pernicious malarial fever, tropical liver abscess, leprosy, beri-beri, and countless cases with intestinal parasites. Our relation to the Orient is not an unmixed blessing. It seems high time that more attention was paid to the portal of entry of diseases which are certain from now on to menace us all the time.

The supervisors of the city are of the opinion that the eradication of plague in San Francisco is not merely a local matter and that the Federal Government should assume part of the expense. The city is willing to expend $10,000 a month and proposes to ask the general government for the other $30,000 which are required.

At a conference, attended by the Governor, the Mayor, and various city and state officials, which was held Nov. 8, the following resolutions were adopted:

Whereas, the United States Marine-Hospital Service, acting in conjunction with the state and the city authorities, has thus far successfully coped with the plague situation prevailing in the city; and

Whereas, it is of vital importance that the labors of these joint bodies be continued without interruption; and

Whereas, the city of San Francisco has contributed most of the funds necessary for the accomplishment of the work of these joint bodies; and

Whereas, we believe that the successful prosecution of this work is a matter of concern to the entire United States, and for that reason one that should be controlled by the Federal Government, and that San Francisco cannot, without seriously crippling itself, continue to defray the expenses of such work, by reason of the enormous demands now being made upon its treasury for rehabilitation purposes; now, therefore, be it

Resolved, That it be the sense of this meeting that the chairman of the Finance Committee of the Board of Supervisors of San Francisco, the president of the Board of Health of San Francisco and the secretary of the State Board of Health proceed at once to the city of Washington for the purpose of securing from the Federal Government the necessary financial means for the prosecution of this work to a successful conclusion.

Very truly yours,

Philip King Brown, M.D.

ON THE TREATMENT OF TYPHOID FEVER WITH SPECIFIC SERA, FILTRATES, AND RESIDUES (VAUGHAN).

Boston, Nov. 16, 1907.

Mr. Editor: I was very much interested to read Dr. Prince's letter in the last number of the Journal concerning the unreliability of statistics when applied to anything but a very large series of cases of typhoid fever. I, myself, have always been conscious of this unreliability, though I was not aware that it had been so conclusively demonstrated as is shown by Dr. Prince's investigation of 3,000 cases.

This lack of faith in figures I thought I had made plain when I said

(1) "A comparative study of 130 cases of typhoid fever appears in the following tables, which offer many points of interest, but which *must be scanned very critically lest they convey false impressions.*"

(2) "*Taken with the reserve with which all such tables must be observed.*"

(3) "That specific therapy increases *apparently*."

(4) "This claim [prevention of relapses] is, . . . of course, *subject to confirmation by observation upon a much larger series of cases.*"

(5) "The nontoxic residue *seems* to make the typhoid process longer but milder."

It is apparent, therefore, that, if eight years are consumed in the investigation of 130 cases of typhoid fever, it is scarcely possible within a single lifetime to make a satisfactory statistical study of treatment in typhoid fever. I do believe, however, that one who has spent ten years in studying typhoid fever from various points of view is entitled to have some very strong impressions and beliefs, and I should like to state again my *belief:*

(1) That typhoid fever can be favorably influenced by specific methods of treatment, if that treatment can be instituted early enough. Lack of a positive diagnosis is often a great hindrance, but the newer methods of blood culture promise better results in this regard.

(2) That by specific treatment the relapse in typhoid fever can be largely eliminated.

Very truly yours,

Mark W. Richardson, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 9, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	4	1
Chicago	—	—	Waltham	6	0
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	—	—
Baltimore	197	43	Brookline	7	1
Cleveland	—	—	North Adams	4	—
Buffalo	—	—	Chicopee	6	2
Pittsburg	—	—	Northampton	6	3
Cincinnati	—	—	Medford	8	—
Milwaukee	—	—	Beverly	1	—
Washington	—	—	Leominster	8	3
Providence	78	23	Hyde Park	5	1
Boston	205	47	Melrose	1	1
Worcester	24	6	Newburyport	—	—
Fall River	38	16	Woburn	2	1
Cambridge	15	3	Marlboro	6	1
Lowell	38	8	Westfield	3	1
Lynn	18	2	Peabody	—	—
New Bedford	27	9	Revere	2	1
Springfield	19	7	Attleboro	2	0
Lawrence	27	6	Clinton	0	—
Somerville	17	2	Adams	7	4
Holyoke	29	14	Gardner	1	—
Brockton	5	2	Milford	0	—
Malden	14	2	Watertown	0	—
Chelsea	18	4	Plymouth	—	—
Salem	15	1	Weymouth	2	0
Newton	7	—	Framingham	1	1
Haverhill	20	—	Southbridge	3	1
Fitchburg	8	2	Wakefield	—	—
Everett	5	1	Webster	—	—
Taunton	—	—			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOV. 16, 1907.

E. Z. DERR, medical director. Detached from the navy yard, Portsmouth, N. H., and ordered to the naval recruiting station, Providence, R. I.

J. M. STEELE, medical inspector. Detached from the naval recruiting station, Cleveland, Ohio, and ordered to the navy yard, Portsmouth, N. H., and to additional duty in command of the naval hospital at that yard.

V. C. B. MEANS, surgeon. Sick leave extended three months from Nov. 16.

J. D. MANCHESTER, passed assistant surgeon. Detached from the naval hospital, Pensacola, Fla., and ordered to the "Panther" when commissioned.

J. H. PAYNE, Jr., passed assistant surgeon. Detached from the naval recruiting station, Providence, R. I., and ordered to the naval recruiting station, Cleveland, Ohio.

R. B. WILLIAMS, passed assistant surgeon. Detached from the "Maine" and ordered to the "Franklin."

R. A. WARNER, assistant surgeon. Detached from the "Louisiana" and ordered to the naval hospital, Pensacola, Fla.

L. H. WHEELER, assistant surgeon. Ordered to the naval recruiting station, Indianapolis, Ind.

D. H. CASTO, assistant. Detached from the naval recruiting station, Indianapolis, Ind., and ordered to the "Maine."

W. G. STEADMAN, JR., assistant. Detached from the "Franklin" and ordered to the "Louisiana."

G. H. BARBER, surgeon. Detached from the "Kearsarge" and ordered to the "Wabash."

H. D. WILSON, surgeon. Ordered to the "Kearsarge" Dec. 1.

M. W. BAKER, passed assistant surgeon. Detached from duty at the naval hospital, New Fort Lyon, Colo., and ordered to the naval hospital, New York, N. Y., for treatment.

L. W. BISHOP, passed assistant surgeon. Detached from the "Missouri" and ordered to continue treatment at the naval hospital, New York, N. Y.

R. H. NICHOLS, passed assistant surgeon. Detached from the naval recruiting station, Kansas City, Mo., and ordered to the "Missouri."

J. L. BELKNAP, assistant surgeon. Detached from the "Wabash" and ordered to the naval hospital, Boston, Mass.

G. L. WICKES, assistant surgeon. Ordered to the naval recruiting station, Kansas City, Mo.

J. G. FIELD, surgeon. Ordered to the naval training station, San Francisco, Cal.

C. BIDDLE, surgeon. Detached from the naval training station, San Francisco, Cal., and ordered to Washington, D. C., for examination for promotion, and then to wait orders.

C. N. FISKE, passed assistant surgeon. Detached from the "Yorktown" and ordered to the naval hospital, Mare Island, Cal.

G. W. SHEPARD, assistant surgeon. Ordered to the naval hospital, Mare Island, Cal.

R. I. LONGABAUGH, assistant surgeon. Detached from the naval hospital, Mare Island, Cal., and ordered to the "Yorktown."

C. A. LUNG, surgeon. Ordered to the naval recruiting station, Philadelphia, Pa.

L. W. BISHOP, passed assistant surgeon. When discharged from treatment at the naval hospital, New York, N. Y., ordered to the naval training station, Newport, R. I.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — The regular meeting of the society will be held in Sprague Hall, Medical Library Building, on Monday, Nov. 25, 1907, at 8.15 P.M. Program: Personal Experience with Specific Vaccines in the Treatment of Bacterial Disease: Dr. Mark W. Richardson. The Value of Vaccine Therapy in the Treatment of Bacterial Disease: Dr. Cleaveland Floyd (by invitation). Discussion: Drs. H. F. Hartwell and Roger Lee.

DANIEL FISKE JONES, M.D.,
Secretary.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY IN CONJUNCTION WITH THE BOSTON MEDICAL LIBRARY. — Meeting Wednesday, Nov. 27, 1907, at 8.15 P.M., John Ware Hall. Some Observations upon Renal Surgery, from an Analysis of One Hundred and Thirty-five Operative Cases: Dr. G. E. Brewer, New York. An Insidious Type of Nontuberculous Pyelonephritis: Dr. A. L. Chute. Light refreshments after meeting.

J. C. MUNRO, M.D., *Chairman.* J. C. HUBBARD, M.D., *Secretary.*

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A meeting for Scientific Improvement will be held at Masonic Temple, 171 Warren Street, Roxbury, on Tuesday evening, Nov. 26, 1907, at 8 o'clock. The following papers will be presented: Cough in Relation to Nose and Throat Affections: Dr. C. D. Knowlton. A Plea for a More Accurate Diagnosis in Throat and Nose Diseases by the General Practitioner: Dr. H. V. McLaughlin. Vasomotor Disturbances (Deviations of Septum; Hay Fever): Dr. F. D. Lyon. The Tonsils and Their Relation to General Infection: Dr. C. P. Sylvester. The discussion will be opened by Drs. J. B. Brainerd, C. R. C. Borden and A. E. Rogers.

WILLIAM H. ROBEY, JR.,
Secretary.

RECENT DEATHS.

WILLIAM FREDERICK HEALD, M.D., M.M.S.S., died in Pepperell, Nov. 6, 1907, aged sixty-four years.

DR. THOMAS H. HOLGATE, an old-time practitioner of New York, died on Nov. 14 at his home on West 14th Street, where he had resided for many years. He was graduated from Bellevue Hospital Medical College in 1869, and was seventy-six years of age.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Fractures. With Notes upon a Few Common Dislocations. By Charles Locke Scudder, M.D. Sixth edition, thoroughly revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

Papers upon Genito-Urinary Surgery. By A. T. Cabot, A.M., M.D. Reprint.

The Medical Record Visiting List or Physicians' Diary for 1908. New revised edition. New York: William Wood & Co.

Transactions of the Twenty-ninth Annual Meeting of the American Laryngological Association held at Washington, D. C., May 7, 8 and 9, 1907.

Textbook of Organic Chemistry for Medical Students. By Dr. G. v. Bunge. Translated with additions by R. H. Aders Plimmer, D.Sc. (Lond.). London, New York, Bombay and Calcutta: Longmans, Green & Co. 1907.

A Manual of the Practice of Medicine. Prepared Especially for Students. By A. A. Stevens, A.M., M.D. Eighth edition, revised. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

JOHNS HOPKINS HOSPITAL DEC 2 1907 LIBRARY

Original Articles.

ANTERIOR POLIOMYELITIS IN THE ADULT, WITH ILLUSTRATIVE CASES.

BY G. L. WALTON, M.D., BOSTON.

This disease deserves more notice on the part of the general medical profession. In the first place, it is of not infrequent occurrence. I have notes of ten typical cases seen in consultation during the past four years. In the second place, its early recognition is important as bearing both on prognosis and treatment, or rather care, for too energetic treatment in the early stages is in danger of retarding rather than favoring the ultimate progress.

The clinical history of these cases conforms much more accurately to the textbook type than do cases of certain other disorders with which the general practitioner is more familiar.

Symptoms of poliomyelitis in the adult are overlooked, not because they vary materially from the same disease in infancy (infantile paralysis) but because this diagnosis does not enter the mind of the practitioner in case the patient is an adult, whereas it is ever present when the patient is a child.

In the adult appears the same stage of fever, during which signs of irritation appear, and during which the destruction of anterior spinal gray matter produces relaxed paralysis of various muscle groups, without loss of sensation or sphincter control (temporary loss of sphincter control did occur, however, in the first case reported); there are the same favorable prognosis as regards health and the same gradual disappearance of paralysis with more or less permanent residue.

The essential features point, in the adult as in the infant, to an infectious process, of more or less diffuse onset, but having for its chief point of attack the anterior gray matter of the cord, to which region the ultimate injury is limited.

It is not improbable that the original infection involves, to some extent, the meninges, and even the nerve sheaths, as shown by rigidity and sometimes retraction of the neck, pain in the back, neck and extremities, and general tenderness. These symptoms attract little attention in the child, and may even be accompanied by convulsions, without diverting attention from the important feature, namely, absolute flaccid motor paralysis of rapid onset unaccompanied by anesthesia. It is this combination which points distinctly to disease of the gray matter of the cord rather than to the meninges or the peripheral nerves.

In the adult the initial symptoms are apt so to color the picture that the essential nature of the injury is overlooked, and the final paralysis is erroneously attributed to the remains of meningitis or neuritis. The following notes are those of two recent cases in which the initial symptoms indicated that the meninges shared in the original infection.

Case I. C. D., male, sixteen, patient of Dr. Beaton, of Franklin Falls, N. H. Previously well and strong. On first day walked two and one-half miles; felt as if had "taken cold"; could not walk home. On second day, feverish; on third day, consulted physician; temperature 104° F., *pain in back of neck with marked retraction of head;* headache; heavy feeling in limbs without numbness; on fourth day, pains in arms; temperature 105° F.; on the fifth day and for two days after required catheterization; on sixth day temperature 102° F.; relaxed paralysis of both legs and right arm; patient feels well, and stiffness of neck has practically disappeared; on seventh day, temperature 100° F., no further extension of paralysis; on tenth day, temperature was normal and patient began sitting up, after which pain and tenderness reappeared in the legs and forced his return to bed, since which they have lessened. Within a month after the onset the arm had nearly recovered its power, but both lower limbs were practically helpless with loss of all reflexes.

It is too soon to announce the final result of this case, but indications point to incomplete recovery as regards the paralysis. In this case the attending physician blamed premature effort for the return of pain and tenderness, an opinion with which I am inclined to coincide. There was certainly no fever or other indication of recurring infection, an extremely rare complication in any event.

Case II. G. G., male, twenty, patient of Dr. May, of Newton. Previously well and strong. On first day was in bed complaining of headache and *sensitiveness to light;* temperature 102° F.; the third day was up but easily tired; on fourth and fifth days, patient kept quiet without definite symptoms; on sixth day, chills and malaise, vomiting, temperature 102.5° F., *general hyperesthesia,* blood count 14,000 whites. On seventh day, temperature 101.4° F., listless, sleepless, *severe pain in head and back, inability to bear light* and sudden onset of complete relaxed paralysis of left shoulder group without anesthesia; *marked rigidity of neck and of back;* on eighth day, while the temperature was still elevated, the paralysis spread to the other arm and to both legs; on ninth day, stiffness and pain had practically disappeared and temperature was normal, general condition was good, but paralysis was complete.

The forecast for the future is the same in this as in the preceding case.

In four other of the ten cases stiffness and pain in the neck were prominent symptoms at the onset, namely, cases 4, 5, 8 and 10.

The distribution of the paralysis in these cases renders it probable that the meningeal infection was coincident with, rather than in extension of, the cord lesion which caused the final paralysis. In Case II, for example, the stiffness, pain and retraction were marked in the *neck,* whereas the final paralysis involved the *lower limbs* almost exclusively.

Although it seems that poliomyelitis in the adult conforms in many ways to the ordinary poliomyelitis of infancy, its clinical features may diverge sufficiently to render the diagnosis far less easy, especially if the practitioner is not on the lookout for it. The apparent difference is, perhaps, largely due to the ability of the adult more

accurately to describe his symptoms, partly also to the more leisurely onset of the disorder.

All the cases coming under my observation have occurred in young robust adults, generally from seventeen to twenty, eight of them males.

The affection has been ushered in by severe headache and neckache, perhaps backache, general malaise, with or without chills, sometimes with general pain and tenderness, sometimes with marked rigidity of the neck and retraction. The symptoms of an ordinary "cold" have been common at the onset of, or perhaps preceding, the infection of the nervous system, doubtless indicating the initial action of the micro-organism. The fever has run a fairly moderate course; it has sometimes, but not generally, reached 104° F., and has lasted rather longer than is common in children, for example, seven days. The paralysis is longer deferred than in children, but when it appears it may do so with great rapidity, perhaps in the course of a few hours, but it is generally longer appearing than in infants. In the following cases the paralysis appeared on respectively the ninth and sixth days.

CASE III. C. H., male, seventeen. Patient of Dr. Hunt, of Newtonville.

Athletic boy. First day, legs felt tired and painful. The next day, was walking about. The third day, nausea, malaise and headache. The fourth day, there was fever, temperature 101.6° F.; was in bed. Had pain in back, head and legs. The fifth day temperature 100.4° F.; pain continued. The sixth day the temperature was 102° F.; ached all over, including arms. The seventh day the temperature was 100° F.; legs ached. The eighth day the temperature was 99.8° F. in the morning, 100.7° F. in the afternoon; vomited; pain lessened. The ninth day the temperature was 99° F. This day appeared definite loss of power, and patient had to be helped to chair. The tenth day he handled the legs better and felt better. On the eleventh day the temperature was normal; there was no numbness or sphincter disturbance. Moderate tenderness in both arms and in left leg: cannot raise left knee in bed nor roll left leg. All affected muscles react to faradism. Knee jerks active right, absent left. No anesthesia.

Three months later was up and about, swinging the left leg slightly but able to walk without a cane. Can go up stairs one step at a time. (No extension of paralysis after temperature normal. Case of practical recovery.)

Went on crutches about eight months, then with cane. About eight months later left off cane and from that time has had practical use of leg except a little difficulty in ascending hills and running.

CASE IV. D. D., female, seventeen. Seen recently in consultation with Dr. Adams, of Pittsfield, and Dr. Powers, of Boston.

Well and strong. First day, chilly and severe headache. Second and third days, dull ache in arms, legs, and especially neck and left shoulder. Fourth day the pain continued. Temperature, 99° F. to 100.2° F. Sixth day, knees gave out, especially the right; temperature was normal. No loss of sensation; no sphincter disturbance. Loss of power to raise right foot at ankle, and to less degree same loss on left. Loss of power in left shoulder and upper arm group, especially deltoid and biceps. Weakness in extension of left wrist. Movements of hands and toes normal. Marked stiffness of neck and inability to bend head forward, actively or passively. No further extension of paralysis. Two weeks later all muscles contract voluntarily and to faradism except tibialis anticus on the right.

The paralysis may rapidly spread in the course of a day or two, but *in only one* (Case 5) *of the 10 cases reported was there further extension of paralysis after the fever had disappeared.* This may be of importance in prognosis, but further data are desirable. At present I am inclined to prophesy that there will be no further extension of paralysis after the temperature has dropped to normal, whereas in case it has not done so the family should be warned of the possibility of extension.

In Case II the left shoulder group alone had become paralyzed on the seventh day; the temperature was still somewhat elevated. The next day all four extremities were completely helpless. In Case IV, on the other hand, which I saw on the seventh day after the temperature had become normal, the paralysis had come to a standstill and was practically limited to the left shoulder group, the flexor group of the right leg, and to a less degree of the left leg. The prediction of no further extension was verified by the further history.

It is justifiable to give a good prognosis as regards life, even though there may be at the onset more or less meningeal accompaniment, and though the paralysis may not have reached its maximum. With regard to disappearance of paralysis, the prospect seems to me better than in children. A proportion of four practical recoveries in ten cases is surely unprecedented in the history of infantile paralysis.

A brief history follows of the cases in which, as in Case III, practical recovery followed.

CASE V. P. O. D., male, twenty-seven years. Patient of Dr. Mead, of Winchester.

Robust. In the evening of first day noticed weakness of fingers in undressing; the next day difficulty in walking, and toe-drop. Third day the legs were more helpless but he could still stand. Fourth day was worse, but went to his office, having to be helped to the train. Fifth day could not rise from chair but could walk across room. Sixth day could not even sit up in bed; dull ache in back of neck, no numbness or trouble with sphincters. There had been no elevation of temperature since the third day (that is, there was in this case extension of paralysis after temperature became normal).

Physical examination shows paralysis, purely motor, especially affecting extensors of both lower extremities. Gradual improvement set in about a month after onset, and three months later he could skate, dance and ride without trouble. Detailed examination showed all movements perfect except a slight difficulty in using the arms, as in putting on the coat.

CASE VI. R. D., male, nineteen. Patient of Dr. Beaton, of Franklin Falls, N. H.

First day, fever 102° F. Second day, pain in back, Third day, paresis of superior oculi recti; pupils large and immobile to light; pain in left shoulder and in back. Fourth day, was unable to walk a crack and left toe dragged; knee jerk was absent. Fifth day, the paralysis increased, temperature became normal on this day. Six weeks later, practical recovery, but slight weakness in arms on use, as after a long drive.

CASE VII. Male, fifteen. R. C. T. Patient of Dr. Jackson, of Milford.

Previously well, though not strong. At onset fever during seven days (highest temperature 103° F.). In bed four weeks. No pain in head or back; no soreness,

but pain in both legs. No sphincter trouble, no numbness. Before fever subsided found could not move leg. Improved gradually. When I saw him (six months later) left calf nearly one and one-half inches smaller than right, left thigh two and one-fourth inches smaller than right. Coldness of left foot. Complete and extensive relaxed paralysis. The leg is now (three years later) used practically as well as ever.

In the following case the boy now (three years later) gets about as well as ever, but still has weakness in the leg.

Case VIII. P. A., male, seventeen. Patient of Dr. Stevens, of Belmont.

Previously well and strong. At onset thought had taken cold; sore throat, temperature of 103° F. One week later similar attack accompanied by backache and temperature of 103° F. Pain also in back of neck, and stiff neck. In bed ten days during which lost power in left leg, with toe-drop; knee jerk absent left, lessened right. Improvement gradual. Six weeks later could not stand on toes. Three months after could stand on toes but not on heels. Six weeks later could not bend his back to lace his shoes, but after another six weeks could do so. Three months after onset left calf measured three-fourths inch less than right; left thigh just above knee one inch less than right. Three months later complete paralysis of tibialis anticus and peroneus longus persisted on the left, with degeneration reaction.

In the two remaining cases improvement has come to a standstill for so long a time as practically to preclude recovery.

Case IX. M. A., male, twelve. Patient of Dr. Bowker, of Brookline.

Active and strong. Had a "cold" and did not feel well during few days prior to day of actual onset. First day, headache and was delirious after rough usage at football. Second day, temperature 102.5° F., headache, soreness in chest and back. Third day, still in bed. Fourth day, up. Fifth day, temperature normal; this day appeared loss of power in right leg. No loss of sensation, but marked loss of power of thigh muscles right, less left; knee jerks absent both; some loss of power in right leg also. Improvement appeared two days later, but paralysis of leg has persisted four years, and mechanical support is necessary.

Case X. M. C., female, thirteen. Patient of Dr. Averill, of Campello.

Robust. Played football up to day of onset. That night had pain between shoulders. The next day rode bicycle. Coming home found difficulty in getting on and off and in pushing. (Has had coryza two days.) The second day knees gave out, then arms. The third day could only crawl on knees; marked tendency to retraction of head; temperature, 104° F. Temperature normal from the seventh day. The ninth day still unable to bend head forward. No extension after temperature became normal. The paralysis has remained stationary for three years. Patient is unable to walk.

I cannot forbear emphasizing the importance of rest in the treatment. The patient cannot be kept too long in bed, nor too long postpone bearing the weight upon the paralyzed limbs. It is of importance already, while the patient is in bed, to commence upon treatment directed toward the obviation of contractures. A light elastic stretched from the foot to the knee[1] is useful in toe-drop, as well as a cradle to keep off the weight of the clothes. Energetic massage and electrical treatment should be postponed at least a month, after which they contribute greatly to favorable progress. Otherwise the management of the case is orthopedic.

Conclusions. — Acute or subacute poliomyelitis in young adults is not rare.

The real seat of the infection is apt to be obscured by temporary symptoms pointing to the meninges and nerve sheaths. The implication of the meninges is probably independent, not an extension from the substance of the cord.

The onset of paralysis is more retarded in adults than in infants, and the extension of paralysis from one group to the other is less immediate.

No extension of paralysis is to be expected after fever has subsided.

Prolonged rest of the affected muscles is desirable, as well as early orthopedic measures.

DIAGNOSIS OF GASTRIC CANCER.*

BY RICHARD F. CHASE, M.D., BOSTON.

Cancer of the stomach is a very common disease, more common than many realize. It causes about 2% of the total mortality. Of all cancers, nearly 50% involve the stomach. Statistics show that the disease is on the increase. In the writer's experience gastric cancer is encountered once in about every one hundred and fifty patients over fifteen years of age, as seen in a general medical clinic. If in such a clinic we should exclude the considerable number of patients under thirty years of age, we would then find the per cent of cancer patients vastly increased. Of a recent series of 100 consecutive cases of gastro-intestinal diseases taken from private records, it was found that 10 or 10% were cancer of the stomach.

The general physician who sees but one or two of these cases yearly rarely has the great seriousness of the subject brought home to him, as does the physician or surgeon who encounters fifty to one hundred or more cases each year. Yet it is upon the general physician that the welfare of these patients most depends, for it is he who first sees them and first directs their treatment.

Since there is no medical cure for the disease, and because surgery if taken advantage of early enough may bring about cures, an early diagnosis and resort to surgery is the accepted course to be taken.

But here the very important questions arise, By what means and how early may the diagnosis be made?

Medical means of diagnosis:

History. — The symptoms arising from gastric cancer are usually of short duration at the time the patient first seeks treatment; rarely have

[1] An admirable appliance for distributing the pull of the elastic is the boot of Gowers, made of a single piece of sole leather, cut so as to make a hinge at the heel.

* Read at the meeting of the Middlesex North District Medical Society, Jan. 30, 1907.

they extended over a period of more than three to six months. Yet how often cancer has been excluded in the diagnosis, when present, because the patient may have had gastric symptoms for several years! In such cases of cancer, careful inquiry will almost always reveal the fact that the *character* of the symptoms or the *symptoms* themselves have recently changed. That is, the symptoms of a chronic "dyspepsia" have given place to those arising from cancer. Information regarding past ulcer should always be sought, because recent findings show that about 50% (some say 80% to 90%!) of cancer patients give a history of former ulcer.

Age. — It is well known that the disease occurs most often between the ages of forty and seventy years, but cases occurring between the ages of thirty and forty years are by no means rare. In one of the writer's recent cancer patients, the disease occurred at the very early age of twenty-five years, eleven months. This case will warrant a further report.

Weight. — It is equally well known that loss of weight is a very constant symptom. Just how constant and progressive, and of what diagnostic value this symptom is, will be shown in a measure by further reference to the 10 cases already mentioned.

In 8 of the cases at the time of their first visit there were losses of weight from 3½ to 46 lb.; in the other 2 cases there was extreme emaciation. But of *far greater* diagnostic value is the progress of weight during observation and modern medical treatment. Of the 10 cases, 6 were observed and treated from four to fifty-two days, as may be noted in table. Each case during treatment, regardless of the great alleviation of symptoms in some cases, the increased diet and improved digestion, showed a loss of weight.

Occasionally, frequently perhaps, a maintenance or even slight increase in weight may be temporarily observed. But in gastric cancer this condition can be of but brief duration. Considerable alleviation of symptoms and increase of weight in the first ten days of treatment should not lead the physician to too early abandonment of the diagnosis of cancer. Since a progressive loss of weight is rarely encountered during the treatment of gastric disorders other than cancer, its observation is strongly suggestive of a malignant condition.

By observing a patient's weight is meant the weighing of a patient at each visit on a set of accurate scales, due allowance being made for changes in clothing and other conditions influencing the weight. Of course more accurate information might be obtained by weighing the patient stripped, but this method has been found both impractical and unnecessary in office work.

The weight of patients with gastric stasis should always be taken preferably after the stomach has been evacuated, and only such weights are to be compared.

The reason for this is that in cases of stasis, the contents of the fasting stomach may weigh from one to several pounds, hence after evacuation of the stomach, the patient weighs from one to several pounds less, depending, of course, on the amount of fasting contents. Not infrequently loss of weight has been the chief factor in determining the probable presence of cancer; at other times, its continued absence has been the chief sign by which that disease was excluded. Let there be a more general use of this accurate diagnostic instrument, the weighing scales; then will cancer of the stomach be suspected at a much earlier stage of the disease, than at the present time.

If from the history, age and loss of weight (enough points in any case to arouse suspicion) we suspect cancer, then by a thorough physical examination, together with the application of the various diagnostic tests at our command, we can soon strengthen or confirm our suspicions in the case of cancer, or prove their falsity in case of the existence of another condition.

Chemical tests. — The continued absence of HCl and the *persistent presence* of lactic acid, when frequent gastric lavage is employed, are chemical abnormalities of the gastric juice most often met in cancer of the stomach, and very rarely in other conditions. These changes in the secretion are observed in most of the advanced cases of this disease, although with the lesion located at the cardiac end of the stomach, they may be met at a fairly early stage. On the other hand, usually in cases with the lesion at the pyloric end, the HCl may be present in normal or even in excessive amounts, and as late as the last few weeks of the patient's life, but in these cases gastric stasis is almost always present and has probably existed for some time prior to this late stage.

The finding of food in the fasting stomach, at times when it should be empty, indicates either impaired peristalsis-stasis, or atony, or pyloric obstruction, conditions most often caused by cancer.

In the absence of gross signs of stasis, the finding of microscopic fragments of food in the rinsing water, several hours after the stomach has emptied itself, and especially if the lactic acid bacillus is present, is considered by Ziegler [1] an early and constant symptom of cancer.

Salomon's test. — The detection of appreciable amounts of albumin by Esbach's reagent, in salt solution which has been used to wash out the stomach, several hours after the stomach has emptied itself, according to Kuttner,[2] Zirkelbach [3] and others is a reliable and early sign of cancer. In a limited number of cases, the writer has thus far obtained positive results in cancer cases only, and negative results in mucous gastritis and other nonmalignant diseases. The test seems worthy of further application.

Mechanical and other means. — Very often aspiration of the stomach contents reveals the presence of free blood, and in cases in which hematemesis has never occurred. This finding, together with other symptoms, may suffice to

[1] Ziegler: Zeitschr. für klin. Med., lviii, Nos. 5, 6.
[2] Kuttner: Berl. klin. Wochenschr., xlvii, Nos. 20 and 26.
[3] Zirkelbach: Arch. für Verdauungskrankh., xii, No. 5.

practically confirm the diagnosis. The repeated detection of occult or invisible blood in the feces, if the proper precautions are taken in the tests, is a valuable diagnostic sign, and especially so in cases in which blood has not been otherwise observed.

Inability to pass a stomach tube more than 15 to 16 inches indicates an obstruction at the lower end of the esophagus or at the cardia; this condition with other signs may point strongly to a malignant disease.

Much delay or complete absence of the "deglutition sound" after taking a swallow of water also has the same significance. Simple palpation of the stomach, if skillfully carried out, will at times reveal the presence of very small tumors, even merely indurated areas on the anterior wall. And should doubt exist regarding the presence of a tumor, inflation and palpation may decide the question. Inflation and palpation is also one of the best means of locating certain gastric tumors, and of distinguishing between tumors of the stomach and of other organs.

Since the subjective symptoms of this disease are so closely simulated by those of other gastric disorders, they are of but little diagnostic value. Pain, however, of some variety is a very constant and fairly early symptom; so also is anorexia.

Numerous other tests of more or less value are sometimes employed in the diagnosis of this disease. However, the proper application of *all* the methods of diagnosis here mentioned will enable one to arrive at a reasonable certainty of the presence of gastric cancer, when present, much earlier than the diagnosis was formerly made; and in other nonmalignant cases by the same means, one may exclude cancer in a reasonably short time.

Please remember that it is quite as important to exclude cancer in its absence as it is to make a positive diagnosis when present. The above methods are equally valuable in either case.

And, furthermore, let it be remembered that the medical man's full duty to his suspected cancer patient has not been done until *all* of the medical means of diagnosis, if required, have been applied. The old cardinal symptoms of gastric cancer have been purposely omitted because if we are not to see patients until after the appearance of these symptoms, then there is little need of making a diagnosis.

If there are still some physicians who believe that a positive or negative diagnosis of cancer, as the case may be, can be made, simply by a chemical examination of the gastric juice, then the sooner they relieve themselves of this idea, the better it will be for all concerned.

There should no longer be occasion for the utterance of such laments as the following, recently made by one of our prominent surgeons:[4] "It has been pathetic, in some cases, to have patients withheld from operation by supposed absence of cancer, because of the presence of HCl" (in the gastric juice).

[4] Munro: Transactions, Mass. Med. Soc., 1904.

The value of the laboratory methods of diagnosis has at times been overestimated by physicians, and underestimated by some surgeons. It should be remembered by both physicians and surgeons that of our medical means of diagnosis, the laboratory tests constitute but a *part*. As is well known, most surgeons advocate surgical exploration as the best means of making an early diagnosis of cancer

There may be some surgeons who believe, even as John B. Deaver[5] does, that "no patient who presents symptoms of chronic gastric dyspepsia should be allowed to go on his way without operation, as a preventive of malignant disease." But William J. Mayo,[6] who advocates and is as prompt in carrying out early exploration as are most surgeons, says of the diagnosis of cancer: "The most careful and painstaking methods of examination, including laboratory tests, should be insisted upon, but they should not be unduly prolonged."

It can be most truthfully stated that if Mayo's advice is heeded, there will be much less needless gastric surgery, and far more cancer patients will be forthcoming, at a stage of the disease warranting a greater number of radical operations. But in this work there must be intelligent and prompt co-operation on the part of the general physician, for it is he whom the patient first consults, and it is during these early visits that the true condition must be suspected, and determined by some means within a very short time.

We are now confronted with the highly important question, How much time may be allowed for the carrying out of the medical means of diagnosis? Of course, no rule can be established for all cases, except the general one, that it must be as short as possible. In advanced conditions the diagnosis may often be made with much certainty at the first or second visit. At this time a radical, in fact any, operation is usually out of the question. In selected cases a palliative operation may prove of some benefit. In earlier cases, two or three examinations in as many days or a week's time may be necessary. At this stage of the disease occasionally a condition will be found which warrants a radical operation, or, failing in this, if the lesion is at the pylorus, a gastro-enterostomy may prolong the patient's life several months.

In a still earlier class of cases, two or three weeks' time may be required to reach a probable diagnosis, or to learn that the patient needs surgical attention. In quite a number of these cases, if the lesion is favorably located, that is, in the pyloric end, and metastases are not too extensive, resection may be done, or, with adverse conditions for resection, the physician should know at least, and prior to the incision, that a gastro-enterostomy is probably indicated. The chief points to be observed in these various classes of cancer patients regarding operations are: (1) that the physician should be reasonably certain of the presence of cancer; (2) he should

[5] Deaver: Bost. Med. and Surg. Jour., Oct. 11, 1906.
[6] Mayo: Jour. Am. Med. Asso., April 7, 1906.

usually know when the case is beyond surgical relief; (3) in cases which he considers operable, he should have a pretty good idea that the conditions warrant at least a palliative, perhaps a radical, operation. Ulcer cases with stasis may be included here. Some of them cannot be differentiated from cancer by medical means. (4) In certain cases, either early or late, he should know if the cancer is located at the cardia, or lower end of the esophagus, and be aware that no operation, except a gastrotomy as a last resort, should be attempted. In advising regarding operation, the patient's age and his physical condition are features which should be duly considered.

The above classes of patients (and Hoffmann [7] figures it that the disease has then been present ten and three-tenths months) constitute the vast majority, perhaps 95%, of all gastric cancers as seen by the consultant.

In the remaining small portion of cancer cases, the true conditions perhaps cannot be learned by medical means within three weeks' time. In most of these cases, perhaps all, a surgical exploration should certainly be made, and the operation carried out which seems indicated. But even in these cases a radical operation cannot be done, unless the lesion is favorably located. Sometimes the surgical diagnosis will be negative and sometimes mistakes will be made. Mistakes are also made by the medical man. Thus far those of the writer have been in the nature of commissions rather than omissions. They have resulted from one chief cause, lack of sufficiently close and long observation of the patients. In private practice this lack of observation has occurred only in those cases in which it was felt that the physician, referring the case, expected a positive or negative diagnosis from a *single* examination. This source of error in diagnosis has now been eliminated.

If a physician desires a tolerably accurate diagnosis and the best advice from the consultant, he should turn over his patient absolutely, until such time as is required for the final report. Sometimes three days, at other times three weeks, might be required for this report, but not a longer period. A reasonable length of time must be granted for the carrying out of the various tests. In some cases more time may be required to exclude cancer than is needed in other cases to make a positive diagnosis.

For example, at the first visit an absence of HCl, and other symptoms may point to cancer, yet one or two weeks' observation and proper treatment may show, by a return of the HCl, that the case was one of chronic gastritis or simple achlorhydria. Had the case proven to be cancer the diagnosis might have been made in shorter time.

In concluding, it may well be stated that cancer of the stomach should *more often* be thought of by the physician in his diagnosis of gastric disorders, and at an earlier stage of the disease. It is to him that the choice of methods of diagnosis is necessarily left.

Case.	Age.	Duration months.	No. of days observed.	Loss during observation.	Diagnosis on day.	Operated on day.	Operation advised.	Duration of life after gastro-enterostomy.	Duration of life.	HCl.
1	45	9	11	4½ lb.	5th	12th	5th day	9+ months	....	0
2	69	6	52	2½ "	1st	.....	Not advised	....	5+ months	0
3	49	3+	14	6½ "	9th	.....	" "	....	2 "	0
4	65	2+	8	7 "	1st	.....	" "	....	1 month	..
5	57	12	38	3 "	8th	45th	8th day	7+ months	....	+
6	49	4+	4	?	4th	.....	Not advised	....	1½ months	0
7	45	7	11	2½ lb.	9th	14th	11th day	8+ months	....	+
8	44	3+	1	..	1st		1st day	....	....	0
9	40	8	1	..	1st	.....	Not advised	....	3 months	0
10	48	8	1	..	1st	.....	" "	....	1 month	0
A	25 11/12		15	¾ lb.	10th	17th pylorectomy	10th day	Living	....	0

This table of 10 cancer cases may give one a general idea of loss of weight during observation, time required to make diagnosis, etc.

Case A is included on account of early age, etc.

A PORTABLE TRACTION AND RETENTIVE APPARATUS FOR USE IN FRACTURE OF AND OPERATIONS ON THE LOWER EXTREMITY.

BY ROBERT SOUTTER, M.D., BOSTON,
Assistant Surgeon, Children's Hospital; Member of the American Orthopedic Association.

THIS apparatus was devised by the writer for fractures of or operations on the femur or leg or hip-joint. It is often important to overcome contraction of the muscles or prevent overriding of the ends of the fractured bone, and at the same time maintain a good relation of the femur to the pelvis as well as a perfect alignment of the leg.

The proper relations must be maintained while considerable traction is employed. Where manual traction is all that is necessary, even this is hard to maintain with uniformity for any length of time.

Moreover, it is difficult to obtain good counter traction. It is difficult to keep the patient steady during manipulation or during the application of retentive appliances, whether this be plaster of

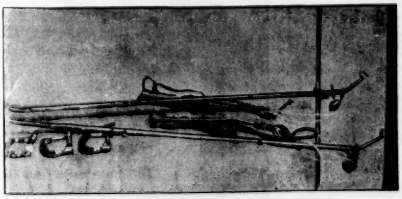
[7] Hoffmann: Mitteil. a. d. Grenzg. der Med. u. Chir., Jena, vol. xlvii.



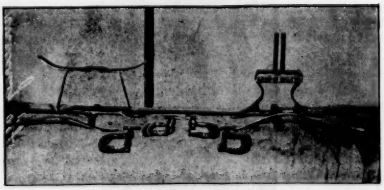
I. Apparatus applied showing traction to both legs with room for the application of retentive apparatus or plaster of Paris.



II. Apparatus applied showing traction to both legs. (Side view.)



III. Traction rods, pulleys, traction, leggins, clamps.



IV. Stand for the shoulders, stand for the pelvis, clamps to fasten them to the table.

Paris or ordinary splints and bandages. At best, improvised methods of holding the shoulders, spine and pelvis, with or without traction, are difficult when a good position is desired.

Many of you are familiar with other forms of traction apparatus, some of which may be seen at the Children's Hospital. These are very perfect in mechanism and are all that may be desired in a hospital, but they are not easily transported. The one before you has proved useful in operations where a strong, efficient and portable apparatus is necessary. While it has been devised for and used in adult cases it is also applicable to children.

It is so arranged that traction can be applied or let up instantly; and during traction the leg manipulated or moved in any position. The shoulders, the spine, the pelvis and the legs are held in position for any length of time, and the apparatus cannot be upset during forcible movement or while a plaster of Paris bandage is applied from the axillæ to the ankles. It is fastened to an ordinary operating table or to a broad or narrow wooden table.

By removing the cross steels and placing a small stand, made for the purpose, between the pelvic and shoulder pieces, the apparatus may be used for certain forms of simple jackets in curvature of the spine or in Pott's disease. It can be carried in a dress suit case and considering the strength and power of the machine, it is not heavy.

In fractures of the femur, absence of shortening depends probably more than anything else on the length obtained at the first application of apparatus and maintained afterward by pull and splint.

During the wiring of old fractures of the neck of the femur, in congenital hip manipulation for traction and maintaining position after subtrochanteric osteotomy, for osteotomy in deformities from badly united fractures and in some other instances, this apparatus is useful.

A BRACE FOR POSTURAL CURVATURE OF THE SPINE.

BY ROBERT SOUTTER, M.D., BOSTON,
Assistant Surgeon, Children's Hospital; Member of the American Orthopedic Association.

THE apparatus before you has been used for two years and has answered the purpose for which it was designed, namely, to prevent lateral displacement of the shoulders and the postural part of a rotation of the shoulders on the hips.



I. Position without the brace — lateral displacement of the shoulders to the right.

It consists of a curved pad for pressure on the



II. Brace applied. The shoulders held squarely over the pelvis with slight over-correction.



III. Side view of the brace in position.

chest bone behind and laterally, and another on the opposite pelvis above the trochanter, the two connected by peculiarly curved steels, one anterior, one posterior. They do not rest on the body to make pressure. The anterior steel is disconnected from the hip pad by a self-retaining catch. The pelvic pad has an arm jointed at the hip which extends down to the thigh band. This arm stands out from the thigh when the thigh band is loose. By the shape of the body steels the leverage is transferred so as to throw the chest forward as well as laterally.

This brace will not take the place of complicated braces and jackets. It will be found efficient for certain postural cases when it is undesirable to weaken the muscles by cumbersome and more extensive apparatus. It does not show through the clothing, remains in place and is adapted for active cases with postural lateral deformities.

Clinical Department.

REPORT OF A CASE OF DISSECTING ANEURISM WITH RUPTURE OF THE AORTA; AUTOPSY.

BY W. E. PAUL, M.D.,
AND
W. A. BROOKS, M.D., BOSTON.

The textbooks fail to give a good description of the clinical features of dissecting aneurism. Our record of one case may, we hope, be of value if an attempt is made sometime to depict the symptomatology which must necessarily be based on a number of complete histories and post-mortems. Up to the present time both Allbutt's statement that "it is known only after death" and Stimpson's that "it cannot be recognized with certainty during life," seem to hold good.

The patient was a hard-working merchant, fifty-seven years old, of a rugged type, who up to five years ago drank alcohol freely and continuously. He was an inveterate cigarette smoker and used much coffee. Twenty years ago he contracted specific disease. Ten years ago he had pneumonia. Three years ago he had a severe appendicitis and delayed consent to operation till it was most urgent. A fetid, gangrenous, sloughing remnant of appendix in a purulent cavity, walled off by adherent intestines, was found by Dr. Brooks and successfully removed. A large hernia has occupied the site of operation on the right side of the abdomen since, but has been controlled fairly well by a belt.

For a few weeks previous to his fatal attack the patient had complained of being below par, and had a frontal sinus infection treated by Dr. F. C. Cobb. His digestion was not so good as usual, and he thought he was drinking too much coffee.

The day on which the final sickness began he was feeling very well and ate a hearty lunch of oyster crabs, apricot pie and coffee. He then took part in a game of cards, and at the end of an hour's play got up to take another chair, when he was suddenly seized with severe pain across the lumbar region, not more marked on one side than the other, and extending upwards and outwards toward the scapulæ, but not going toward the abdomen. He described it as a "red pain." It was so severe that he could not go on with his game and was taken to a bedroom and attended by Dr. Buck. Dr. Paul saw him about fifteen minutes after the onset; the patient was then sitting in a chair, moving to and fro, and complaining of nausea. The pain continued and was dull, steady and boring in character. There was a sense of anxiety in the patient's look and manner. It was considered probable that acute indigestion accounted for the condition of the patient, and efforts to relieve the stomach (drinking warm water) were rewarded with fairly free vomiting of sour-smelling stomach contents. The pain, though somewhat less, remained in the back, and the patient could not lie down, as that position was uncomfortable. Later there were two or three attacks of vomiting, with considerable vomitus. A glass of Hunjadi water was taken, but was vomited in a short time. As the pain continued severe in the back, about three quarters of an hour after he was first seen a quarter grain of morphia was given subcutaneously. The patient then felt as though a movement of the bowels was imminent, but two or three enemata gave little result and no gas was passed. A half hour after the first dose of morphia, a second like dose was given and in the course of ten minutes the pain was much relieved. About two hours after the onset he was able to go down stairs and drive home in a cab.

During all this time he was pale and his pulse did not change.

At his home he vomited once or twice and expressed himself as feeling more comfortable than at any time since the onset of the attack. He vomited occasionally, and two or three times considerable amounts were regurgitated.

Seven hours after the onset the pain, never entirely absent, had moved up higher in his back, between the shoulder blades, and was more a discomfort and burning feeling than a decided pain. A hot water bag made it bearable.

Two hours later and nine hours after the first pain there was an access of most severe, dull, steady, constant pain in the lumbar region at the site of the first pain. He groaned with every breath and sat up in a chair by preference. A ½ gr. hypodermic of morphia was given as soon as possible, and relief was most marked in the course of ten minutes. It was found then that no gas had been passed, that vomiting had continued at intervals, that the pulse was 100, that there was evidence of shock with marked pallor; and it seemed that instead of a simple case of indigestion, some more serious trouble existed which was obstructing the bowel.

Dr. Brooks was summoned in consultation, and agreed that the case was a serious one and that the trouble might be due to the bowel being caught under some band. Physical examination of the abdomen revealed absolutely nothing abnormal, however, and the limitation of the pain to the back was confusing to our diagnosis in considerable measure. Laparotomy was most seriously considered, but was deemed unwise by Dr. Brooks.

Five hours later a saline cathartic was given, but was promptly vomited.

Eighteen hours after the first pain the pulse was 120 to 140 after going to stool; there was decided pallor and some pain persisted in the back. For the first time there was a slight pain in the abdomen over the descending colon. It was slightly tender, but did not cause the patient to shrink on palpation. Two high enemata brought away a moderate amount of fecal matter, but there was little gas escaping at the same time. The temperature was normal continuously from the onset of the pain. During the morning (some twenty hours after the initial pain) hiccough lasting a few moments at a time had recurred. Also there had been some spells of dyspnea lasting for a half dozen

breaths at a time. The patient was carried to the Bay State Hospital and seemed refreshed by the trip. Soon after his arrival high enemata were resorted to again, and considerable mucus, some of it stained slightly with blood, was the chief result.

There was now hardly any pain, but the patient said he by no means felt right. That night he slept fairly and was comparatively comfortable the next day. Small quantities of milk and lime water were retained. The day after entering the hospital a high enema was very successful in bringing away considerable fecal material and gas. It was now assumed that at least the bowel's patency was established. A considerable degree of pallor continued, however; the pulse did not fall below 104 and was unsteady at times, though fairly strong. Hiccough and spells of shortened breath recurred. The tenderness on the left side of the abdomen was a little less marked.

Dr. Franz Pfaff saw the patient at the end of the second day and was of the opinion that an internal hernia or intussusception had occurred but had been greatly relieved. The shock he believed to be an indication that the sympathetic ganglia had been pressed on by the affected intestine.

The condition was little changed for the next two days except that the third night in the hospital there was more shortness of breath coming and going in such a way as to resemble the Cheyne-Stokes type. The temperature ranged from normal to 100°. The urine was normal and fairly abundant, in quantity reaching 50 oz. in twenty-four hours.

The fourth night in the hospital there was an uneasy feeling in the back, as though lame. He could not get into a comfortable position; rubbing relieved for a short time only.

The next day hiccough was rather constant, though he ate more and had a satisfactory movement of the bowels and was rather brighter. He was weak and said he was not right. The uneasy grumble continued in the lumbar region, not more on one side than on the other at any time, and was a source of a good deal of uneasiness and restlessness. Later a menthol liniment relieved him and he slept well for the night.

On the morning of the fifth day of his illness he expressed himself as feeling better than at any time since the onset. He ate a fair breakfast and was so comfortable that after the meal he took a short nap. He answered the inquiries of the nurse cheerily. He sat on the side of his bed in the act of passing his water when he suddenly gave a piercing scream, audible all over the hospital, and grasped his right loin with his right hand, exclaiming in agony; he fell forward, but was caught by the nurse, and after one or two gasps, life was extinct.

It was, of course, now realized that a large internal hemorrhage had been the cause of the final catastrophe. Fortunately, permission for an autopsy was obtained, and Dr. Oscar Richardson's record of the aneurismal findings follows:

The intestines were not obstructed. The peritoneal cavity contains a moderate amount of free fluid blood and the retro-peritoneal tissues are swollen, black red in color, and infiltrated with a considerable amount of blood-like material. About the region of the mesentery the swollen, blood-infiltrated retro-peritoneal tissues bulge forward under the transverse colon. The colon on section is not remarkable. The other abdominal viscera show nothing worthy of note.

On opening the thoracic cavity the right pleural cavity is found to contain an enormous quantity of fluid blood and blood clot, and at a point about where the aorta passes through the diaphragm there is a ragged opening in the wall of the aorta through which the blood has poured into the right pleural cavity and infiltrated into the retro-peritoneal tissues and to a moderate extent into the peritoneal cavity.

On section, the aorta shows, extending along its wall as far down at least as the celiac axis, a black red coat, 2 to 3 cm. thick, which consists of a thick layer of blood-clot-like material apparently resting between the muscular wall of the aorta on the inside and a layer of the adventitia on the outside, limited by the pleura in the thoracic cavity. On section, the intima of the aorta all along its course presents innumerable smaller and larger roughened plaques, fibro-calcareous in instances, and the central portions of many of which show ragged openings which extend into the layer of blood clot and fibrin just beneath the dissected layer of adventitia. At a point in the wall of the aorta just as it passes through the diaphragm there is a ragged opening in the wall margined by arteriosclerotic changed tissue and a ragged interruption in the continuity of the surrounding layer of adventitia, fibrin, and blood clot.

Anatomical diagnosis. — Arteriosclerosis of the aorta; dissecting aneurism of the aorta, with rupture and hemorrhage into the right pleural cavity, the retro-peritoneal tissues, and the peritoneal cavity.

Reviewing the clinical features of the case the pain stands out most prominently of all the symptoms. There were four periods of pain: at the onset, nine hours later, a grumbling discomfort in the back for forty-eight hours before death, and the final death pang. Also there was some pain and tenderness over the descending colon. The pain probably coincided with extension of dissection. Its character and location seem of great significance in differentiating pain originating from dissecting aneurism. The pain was limited to the back and was not more noticeable on one side though it extended across the back and upwards and outwards toward the scapulæ. It was severe, dull, deep aching and boring in character; most distressing and giving rise to feelings of anxiety. The slight pain over the descending colon may very well have been due to extension of blood extravasating in the peritoneum. The final pain immediately preceding death cannot be defined.

Next in importance was the condition of shock which did not disappear at any time, though it varied in intensity. He was pale and his pulse was continuously high after the second attack of pain, except in the last twenty-four hours, when it got as low as 88.

Third, the vomiting was a prominent symptom in the first twenty-four hours of the illness. In the absence of any complaint of indigestion before the onset of the pain it seems fair to assume that the vomiting was due to the aneurismal hemorrhage rather than to coincident irritation by the stomach contents. The vomiting was probably reflex and symptomatic. Of negative value as symptoms was the practical absence of abdominal pain, distension, or anything abnormal on palpation.

It ran its course in five days.

THERE has been an enormous increase in the number of rats in San Francisco, and a bonus is being offered for their destruction. — *N. Y. Med. Jour.*

DYSTOCIA DUE TO FIBROIDS. INTRA-UTERINE DEATH OF FETUS. CRANIOTOMY.

BY JAMES R. TORBERT, M.D., BOSTON,
Physician to Out-Patients, Boston Lying-in Hospital.

Mrs. R. Primipara. Aet., thirty-six.

First seen after ten hours of moderately hard labor, the last six hours of which there had been no progress.

Obstetrical examination showed, externally, an unusually large abdomen; uterus completely filling abdominal cavity. On the anterior surface of the uterus was a firm, movable tumor the size of a large orange; on the right side and fundus, several nodules the size of walnuts, on the left cornu a nodulum the size of a cocoanut.

The fetal parts could not be palpated and no fetal heart was heard.

Feeble uterine contractions were evidenced on palpation.

External pelvic measurements, crestal, 28½ cm. Spinous, 22½ cm. Antero-posterior, 20½ cm.

There was no uterine tenderness.

Internally: head through the brim of pelvis, no fore waters, os dilated 1½ inches. No fibroid involvement of cervix or lower uterine segment.

Internal conjugate not felt.

The maternal pulse was 80, of good quality and regular but as the contractions of the uterus had about ceased and no progress had been made for six hours, operative interference was decided upon.

The patient was prepared with especial reference to asepsis. On account of the possibility of fetal life it was thought best to attempt a forceps delivery. Under ether the os was fully dilated manually and the forceps applied; repeated traction showed no advance of the head so the blades were removed. Introducing the hand by the head, a firm constriction ring was found encircling the infant's neck and shoulders, the ring including the center of the large fibroid on the anterior uterine wall. Carefully stretching the ring the hand passed it and the cord was found pulseless. Very little liquor amnii was present and escaped at this time. Craniotomy with Braun's cranioclast and the Smellie scissors was done and extraction of the fetus accomplished without difficulty. There was no maceration of the fetus showing a recent death. The uterine muscle contracted at once and in ten minutes the placenta came away naturally. Hemorrhage was absent and the uterus behaved well. A large intra-uterine douche of salt solution was given and a minor laceration of the perineum repaired. The maternal pulse rose to 140 during the delivery, but one hour afterwards dropped to 100.

The convalescence was uneventful, save for a slight pyrexia 100.8° F. and a scanty flow of lochia on the third and fourth days. This was met and relieved with copious intra-uterine douches of weak creolin solution followed by ℥iv of 5% alcohol which was left in the uterus. There was no further pyrexia, the lochial discharge continued a trifle more bloody than usual but gradually ceased.

Involution was exceptionally slow; on the third day of convalescence the fundus was an inch below the ensiform cartilage and the fibroids were very easily palpated.

The case without the chart was shown to the students at this time and one of whom made a diagnosis of a full term pregnancy, palpated the fetal head and small parts, but strangely enough had negative results with his auscultation.

The patient was discharged at the end of three weeks, and final examination showed an irregular enlarged uterus extending about one inch above the symphysis. She was advised and consented to, later on, have an operation for myomectomy or whatever seemed best when the abdomen should be opened.

The number of patients with uterine fibroids who pass successfully through pregnancy and labor is really most surprising.

The obstetrical importance of uterine fibroids depends upon their situation,— whether subserous, interstitial or submucous, and whether connected with the upper or lower uterine segment.

Subserous fibroids are of no obstetrical importance.

Interstitial and submucous fibroids in the upper segment of the uterus complicate parturition only by their tendency to produce irregular and feeble pains and thus prolong labor. They are afterwards attended by an increased liability to post-partum hemorrhage, a tendency to delayed involution, and an increased risk of sepsis from sloughing of the tumor. If the tumor growths are not situated at the periphery of the zone of the uterus which dilates, they do not generally give rise to any accident. In the lower segment of the uterus, they offer obstruction to the exit of the fetus; are liable to cause malpresentations and malpositions, and occasionally render delivery by the natural passages impossible.

Rupture of the uterus may take place in healthy uterine structures as a result of mechanical resistance offered to the advance of the fetus, or it may commence at the site of the fibroid where the uterine tissue is particularly thinned.

The conduct of this case with the terminal result naturally raises the query whether, if discovered early enough before the beginning of labor, some operative procedure might not have relieved the condition sufficiently to have accomplished a safe termination of the pregnancy.

The co-existence of a fibroid with pregnancy is not always an indication for operation, but it is extremely desirable to frequently examine women who have such tumors, to note the size, position and rapidity of growth, using such knowledge for the proper conduct of the individual case.

Statistics show that cases of pregnancy complicated with palpably large fibroid growths have a maternal mortality of over 30%, and a fetal mortality of probably 50%.

It has been easy to collect 100 cases of palpably large fibroids complicating pregnancy where myomectomy on the pregnant uterus was performed. In less than 5% was the pregnancy interrupted. The labors have occurred without incident, good uterine contractions have been present and no complications have existed. Subsequent pregnancies have occurred without incident.

Myomectomy is adapted to only certain classes of cases, — where the fibroid is subperitoneal or interstitial, where its size is not too great, and where the uterus may be handled without too much trauma. The hyperplasia of connective tissue in these growths favors the manual separation of the tumor from the uterine walls, therefore rendering operation easier for the existence

of pregnancy. Although Cesarian section followed by enucleation of the fibroid would be the ideal treatment of obstructed labor due to a myoma, yet experience teaches that the great majority of the tumors as so situated are of such character as to render attempt at enucleation hazardous, and for these the Porro Cesarian section, or hysterectomy is imperative.

Those fibroids which have already caused a premature or nonsuccessful labor should be operated upon by enucleation, if possible, when the uterus is empty.

Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THIRTY-THIRD ANNUAL MEETING,

HELD AT COLUMBUS, OHIO, OCT. 8, 9 AND 10, 1907.

THE President, DR. HORACE H. GRANT, Louisville, in the chair.

The scientific work was divided into medical and surgical sections.

LOCAL VERSUS GENERAL ANESTHESIA IN RECTAL SURGERY.

DR. G. B. EVANS, of Dayton, Ohio, believed that by using a local anesthetic previous to general anesthesia the amount of the general anesthetic was appreciably lessened; the dread and fear were diminished, also shock and danger. Therefore the combined method of narcosis, less anesthetic, suspending shock incident to conscious dread, as well as anesthetic shock, rendered more complete the operative area and consequently more satisfactory work. It was easy to operate on prolapsing piles, but not so simple to operate on piles above the sphincters, yet they demanded operative interference. Operation for hemorrhoids was serious, often attended by some shock, and the greatest caution should be observed to secure asepsis. He did not think it was best for patients that general practitioners should be taught that aseptic precautions at the time of operation and rest at home for a few days were unnecessary.

DR. BERNARD ASMAN, of Louisville, gave a few reasons for some unsatisfactory results in the treatment of ano-rectal diseases. A correct diagnosis was always a first essential, for without it all treatment was largely guesswork. Of all rectal ailments, anal fissure was ordinarily thought to be one of the simplest and easiest to cure, yet experience frequently proved it to be most unyielding. Ninety-nine out of every one hundred of the laity assumed that all ano-rectal troubles were hemorrhoidal in character, and it was not uncommon for them to approach the physician with a diagnosis ready-made, and to preface a description of the case in question with, "Doctor, I have piles." The doctor was then apt to accept the diagnosis with but a superficial examination, or perhaps no examination at all, and hence failure to afford relief followed. There were comparatively few cases of hemorrhoids, pure and simple; they were usually complicated by other local disease, perhaps requiring attention at the same time if a perfect result was to be expected. Cases were cited in point.

DISCUSSION.

DR. B. MERRILL RICKETTS, of Cincinnati, said that surgical anesthesia should be eliminated as far as possible in all work, especially now as capital operations could be done under local anesthesia. Local anesthesia for the treatment of hemorrhoids should not be denounced, nor should local anesthesia be recommended for all kinds of hemorrhoids. There were certain hemorrhoids that could be removed radically without anesthesia. He cited such cases. The trend of the times was not to put patients to bed for days and weeks for the removal of hemorrhoids, when they could be removed at the office of the surgeon or at the homes of patients with impunity. Hemorrhoids should be properly classified, and each class should receive a separate and distinct treatment, some with and some without anesthesia; some with and some without ligature; some with crushing and some with simple incision.

DR. J. RAWSON PENNINGTON, of Chicago, emphasized the importance of making a correct diagnosis. If a patient had a small contracted anus, with a few painful hemorrhoids, he or she should be given a general anesthetic and operated on. If the patient had a patulous anus, and the hemorrhoids were easily prolapsed, especially internal hemorrhoids, there was no need for a general anesthetic. He described his method of removing hemorrhoids. When the rectum was everted and the hemorrhoids were on the outside, with a pair of scissors they could be removed very readily, the rectum then dressed in extension, and putting into the bowel a rubber-covered tampon. When this was done there was no tissue under stress. Tissue under stress was not in the best possible condition to defend itself against infection.

DR. H. O. WALKER, of Detroit, had operated on a large number of cases of hemorrhoids, and had not yet had serious bleeding from the rectum. Hemorrhoids should be operated on under the same surgical principles as were carried out in operating upon other parts of the body. If there should be hemorrhage, it could be controlled by ligature or hemostatic forceps.

DR. E. B. SMITH, of Detroit, referred to the importance of making a complete and thorough examination. This could not be done under local anesthesia. He had never been able to do it, nor had he seen any one else do it with satisfaction. He had had the privilege of operating secondarily on patients who had been operated on under local anesthesia. He operated on these cases under general anesthesia.

THE FREQUENT INTERDEPENDENCE OF DISLOCATED KIDNEY, GALL-BLADDER TROUBLE AND APPENDICITIS.

DR. EARL HARLAN, of Cincinnati, summarized the salient features of his paper as follows: (1) That dependent pathology, accompanying the primary lesion of dislocated kidney, gall-bladder trouble and appendiceal irritation of a severe nature, is of frequent concomitant occurrence. (2) Many cases have undergone operation for appendiceal trouble or gall-bladder trouble wherein the causal factor was a dislocated kidney, the latter producing pressure interference to the bile outflow or bowel current. (3) All cases presenting for abdominal treatment, complaining of indefinite and recurrent distress, discomfort and pain, the attacks being accompanied with the presence of an excess of stagnant gas at certain points in the bowel, and in which the involvement of the stomach, gall bladder and appendix are more or less equal, should receive the careful consideration of the physician, in order that an accurate differential diagnosis may be made. (4) In the vast majority of cases a freely movable kidney presents no pathology on the part of the organ itself, and this immunity may cover a considerable space of time, after which there may appear symptoms of functional and mechanical disturbance on the part of the stomach, cholecyst and bowel. (5) On

account of the wide and uncircumscribed range of pathologic symptoms produced by a dislocated kidney, it is more often liable to go undiagnosed than are other symptoms producing abdominal lesions. (6) Permanent and complete relief results only from a correction of the primary lesion with its dependent pathology.

THE DISPOSITION OF THE APPENDICEAL STUMP.

DR. B. MERRILL RICKETTS, of Cincinnati, concluded that the stump should be as short as possible. Any one of the pursestring methods is dangerous. Ligation for the firm appendix and extirpation for the soft one were the better methods. Hemorrhage from the appendiceal vessel was a common accident, and one that could be avoided. The escape of feces into the peritoneal cavity was also frequent. Infection from the stump occurred rarely. Adhesions resulting from a denuded stump, or mesocolon resulting from ligature, were of little consequence. Ligature around the stump without mucosa between it and a stenosed Gerlach valve would not cause pain, otherwise it might do so. A more definite classification of the pathologic appendix and its results should be more generally accepted. The mortality in cases with vomiting, ileus, obstruction, peritonitis and distention was much higher than reports would indicate. It was probably as great as 90%, if not more. It was difficult to understand why so few such cases had been reported, and still more difficult to understand why they were absent in the work of one and numerous in that of others. The average per cent of mortality for acute cases (7.50), and the average per cent for chronic cases (1.75) was probably a fair estimate for the work during the last five years. Linen and silk ligatures had more advantages than catgut, without the disadvantages, and should therefore be given preference. Ligatures of any material or character should be transfixed in any tissue, especially within the peritoneal cavity. Stumps of living tissue should be sutured or ligated with transfixion, especially if there were canals of any character within the stump.

DISCUSSION.

DR. H. O. WALKER believed in ligating the stump of the appendix. After tying off the appendix close to the cecum, he disinfected it with carbolic acid and alcohol, and then by means of a pursestring suture covered it up. As long as the suture material was aseptic, it did not make much difference what was used. He had never had a death from hemorrhage in appendicitis, except where it occurred some ten days or two weeks after the operation, due to the sloughing of the omentum, rupture and obstruction from a gangrenous condition of the arteries of the appendix from which the patient died.

DR. A. M. HAYDEN, of Evansville, said that if one used silk or linen in uncomplicated cases, there were liable to be suppurating sinuses as a result. In these cases he would use catgut, which, in infected cases, becomes disintegrated in seven or eight days, and there were no suppurating sinuses following. He used linen in all of his clean cases, but in the infected ones he preferred catgut.

DR. CHARLES STOLTZ, of South Bend, Ind., spoke of the use of the thermo-cautery, and believed if it was used it would afford hemostasis without the unsurgical method of tying off a mass and letting it stick up in the cavity, without knowing what would become of it.

DR. CHARLES A. BONIFIELD, of Cincinnati, had excised the appendix, closed the wound with chromicized catgut, and then covered the surface by bringing the meso-appendix up over it. He had done this for several years, and to his knowledge had never had a patient die from the bowel opening.

DR. RICKETTS, in closing the discussion, said the so-called absorbable ligatures failed in many of these cases, and that there was nothing better than catgut or linen. They could be boiled and thoroughly sterilized. He had done 400 appendectomies, without a serious hemorrhage or infection, and had never had to take a ligature out. He never used catgut in his abdominal operations, but employed Pagenstecher linen for almost everything.

WHEN SHOULD GASTRIC ULCER BE TREATED SURGICALLY?

DR. MILTON R. BARKER, of Chicago, said that all cases of gastric ulcer, regardless of any class in which they might be placed, excepting the neglected class, should primarily be treated medically, but that in the light of surgical achievements in this malady the internist had a double responsibility to his patients. First, to do all his methods could do, and, second, to discontinue those methods before his patient had reached such a condition that surgical methods could not be instituted without undue hazard. When medical and surgical science could thus work together, the treatment of gastric ulcer would have attained the acme of perfection.

THE REMOVAL OF ADENOIDS.

DR. JOHN F. BARNHILL, of Indianapolis, described a safe and rapid method of removing adenoids. The selection of a proper curette having been made, an assistant took the child upon his lap, placed the patient's knees between his own knees, and thus clamped them as in a vise. The child's head was placed upon the left shoulder of the assistant where it was firmly held between the two hands of a second assistant. Neither a tongue depressor nor mouth-gag was necessary. The operator sat on a chair facing the patient, who was requested to open the mouth. The curette was quickly inserted behind the palate, the posterior surface of which it should closely hug until the crest of the instrument pressed firmly against the vomer at its point of junction with the body of the sphenoid. In this position the patient's mouth must be opened to its fullest limit, and the curette would occupy a position in a plane about 45° to the horizontal, when the ample width of the fenestra surrounded the entire growth. Keeping the curette exactly in the center line of the patient's naso-pharynx, the crest of the instrument was pressed firmly against the vault, in which situation it was quickly pushed backward and downward, the cutting blade of the curette closely hugging the entire base of line attachment of the adenoid, which was thus completely severed *en masse* and fell from the patient's mouth when the head was held forward for that purpose. In the majority of cases only twenty or thirty seconds were required to do the entire work after all was in readiness.

THE SURGICAL TREATMENT OF SOME INFLAMED GLANDS.

DR. E. B. SMITH, of Detroit, urged the enucleation of inflamed suppurating glands. Where there was a hernia and the protruding tissue irritated a set of glands, then the hernia and not the glands must be cared for. Where the inflammation had progressed to the stage where resolution could not be brought about by poulticing, or where a simple incision would not affect a cure, and the tissue was broken down, or there was an accumulation of germs, then the only logical procedure was a radical operation. Glands found beyond hope of repair were excised, thus getting rid of a large number of germs, the remaining tissues being treated antiseptically and repaired. Repeated attacks of inflammation rendered the glands weak and susceptible to

disease and suppuration. When the glands were incised the inflammation and suppuration either subsided or became quiescent for a time, and then from a slight trauma became inflamed and suppurated.

GOITER.

DR. GEORGE W. CRILE, of Cleveland, recently made a study of his cases of operations upon the thyroid gland, numbering 152, and he briefly summarized them from the standpoint of the practical management of the surgical thyroid. The development of the surgery of the thyroid is best appreciated by the statement that the mortality from thyroidectomy in simple goiters, in nonmalignant and benign tumors, had fallen from 40% to a fraction of 1%. In his own series, the last 101 such operations had been done without a fatality. The surgery of benign tumors and hypertrophies of the thyroid gland was now placed upon a basis comparable with that of appendicitis in the quiescent period, of gallstones and of ovarian tumors. The mortality from unexpected complications was perhaps one in one hundred or two hundred cases, in the hands of a surgeon experienced in this line. Graves's disease was demanding much further investigation. Excision of the thyroid in Graves's disease broke a pathologic chain and the cure was permanent. In a goiter under observation, if the gland began to grow, it should be promptly excised because of the great possibility of its becoming a malignant growth. Many more thyroid glands should be removed, just as benign tumors elsewhere were removed, to prevent the appearance of a malignant growth.

NEUROSES OF THE BLADDER.

DR. ROBERT C. M. LEWIS, of Marion, Ohio, considered a few of the neurotic conditions which were traceable to the genito-urinary organs, especially those involving the vesical neck and the deep or prostatic urethra. In neurotic bladder troubles he gave first place to hyperesthesia because he believed it was met with more frequently than any other of its order. Mental worry or over-tension of the nerves for a long period might produce a vesical hyperesthesia with a train of symptoms simulating a true cystitis; but, as a rule, if there were no inflammation, the absence of mucus or mucopus in hyperesthesia would give a line of distinction so that cystitis might be excluded as a complication or as a sequel to other diseases of the bladder; there was found no other condition which gave so much mental and physical discomfort as hyperesthesia. Men were quite sensitive when it came to genito-urinary troubles, but if a physician once gained the confidence of such patients, and afforded them relief, they would not run away.

INTRAMURAL TRANSPLANTATION OF THE ROUND LIGAMENTS VERSUS THE ALEXANDER OPERATION OR VENTRO-SUSPENSIO-FIXATION.

DR. CHANNING W. BARRETT, of Chicago, gave a résumé of the work done with intramural transplantation of the round ligaments, and, after comparing it with the Alexander operation and ventrosuspension, presented the following conclusions: (1) The Alexander operation fails because most cases of retrodisplacement are complicated. (2) An operation to be widely useful must open the abdomen for inspection and correction of complications. (3) It should be capable of being combined with the best incision for doing work. (4) It must not create false ligaments which will not evolute during pregnancy and involute thereafter. (5) There must be no abnormal arrangement of natural ligaments which allows them to run transperitoneally. (6) When the round ligaments are ample, the inner, stronger portion of the ligament should be chosen. (7) Operation for retrodisplacement must often be performed after much more operating, and so should not offer any tedious technicalities, such as are found in the external search for the ligaments. (8) His internal inguinal shortening and transplantation of the ligaments through the abdominal wall is submitted for comparison with external shortening of the ligaments, or ventrosuspension operations, as one seeming to meet the essential requirements of an operation for retrodisplacements.

WHAT WE CANNOT DO WITH PURGATIVES.

DR. EDWIN WALKER, of Evansville, Ind., said the action of purgatives was not well understood. Authorities varied widely as to how they affected the human organism. Practically all agreed that they were irritants. Purgatives and infections of the alimentary canal presented the same symptoms, namely, liquefaction of feces, increased albuminous exudate, the formation of gas and pain. The physician used purgatives in chronic constipation, when very few were in the least benefited, and nearly all were made worse. In obstruction of the bowels, both acute and chronic, they did harm, besides, the time lost often decided the fate of the patient. The routine practice of preceding every surgical operation with a purge was absurd. If the operation was not on the alimentary canal, there was little reason for giving it. If it was on the stomach or bowel, they did not render the condition more favorable since they increased bacterial activity. The author had operated on nearly one thousand cases in which the preliminary purge was omitted. The results were as good or better than when they were given. The patients were more comfortable, and suffered much less with tympany. Laxatives were rarely required after operation, as the bowels would move as soon as it was necessary. Patients did better without them. Purgatives were useful, but should not be given in a routine manner. They should only be given when there were clear indications.

PERINEAL SECTION FOR OBSTRUCTION OF THE PROSTATIC URETHRA.

DR. CHARLES E. BARNETT, of Fort Wayne, Ind., summed up the cause and effect of acute retention of urine. He considered catheterization more dangerous than operation. He believed that bladder drainage through a median perineal section was the operation of choice. Patients who were practically moribund recovered following improved operative technic with a minimum quantity of anesthetic, oxygen inhalation post-operative, Fowler's position, aspiration irrigation with large drainage tubes, and out-of-bed posture second day. Simplicity, but thoroughness, in the post-operative treatment was the *desideratum*. He reported several cases.

EARLY DIAGNOSIS AND REMOVAL OF UTERINE FIBROIDS.

DR. A. D. WILLMOTH, of Louisville, made a plea for the early removal of these growths. He expressed the opinion based on the statistics at hand and his personal experience that it was the duty of the surgeon to remove uterine fibroids as soon as they were diagnosed, unless some constitutional disease or diseases existed that made operative procedures inadvisable because of the risk involved, or where the surgeon had to deal with a young and childless woman who desired a child, or in those in whom the tumor was subperitoneal, small, and giving no trouble.

TREATMENT OF PUS TUBES.

DR. JOHN E. CANNADAY, of Hansford, W. Va., said that operative and non-operative treatment had their

separate and distinct fields. The trend was toward that form of conservatism which really conserved. Extreme and over-conservative measures were as much to be deprecated as early radical extirpation, late and often. Surgical sense, judgment, ability, skill and experience were needed, so that practically pus tubes should never be removed during an acute attack. Many cases would resolve and be restored to normal conditions by waiting. The author made a clinical classification of cases as follows: those that resolved early, those that were followed by obliterating and crippling adhesions, and, finally, those in which large collections of pus were encapsulated and became sterile. In the latter class the best operative results were given. If the operative field was soiled with pus, that was known not to be sterile, a vaginal drain should be inserted, but not an abdominal drain, as the danger of wound hernia was too great. The author reported 100 cases in which laparotomy was resorted to for chronic pus tubes, with a mortality of 1%.

TREATMENT OF INGUINAL HERNIA IN CHILDREN.

Dr. Frank B. Walker, of Detroit, said it was estimated that one third of all herniæ occurred in children under fourteen years of age. In a series of 700 observations reported recently by Corner, it was noted that multiple herniæ were far more frequent in children than in adults. Premature children were very liable to hernia at birth, and inguinal hernia was present on both sides more often than at full term. From observations it would appear that the causes of hernia formation were more operative in earlier years than in adult life. He believed that it was good surgery to use conservative methods for herniæ in children up to five years of age, and thought the majority could be cured thereby; but for the following class of cases, radical measures should be adopted: strangulated hernia; irreducible hernia; hernia associated with hydrocele or undescended testis; hernia threatening strangulation; those which are uncontrolled or painful under truss treatment, and hernia in children over five years of age.

POST-PERITONEAL FIBROID TUMORS OF THE UTERUS.

Dr. Rufus B. Hall, of Cincinnati, reported cases and exhibited specimens. He had had a large number of post-peritoneal tumors to remove. Some of the operations had been very complicated, while others had been comparatively simple. Some of these tumors were easily enucleated, even when large. By following the line of cleavage the surgeon was able to enucleate them without much difficulty. In others it often required great courage and skill to successfully remove them. Some were so firmly attached to the blood vessels and ureters that to successfully remove them was practically impossible. Such a case occurred in the practice of Dr. I. S. Stone, in which he had the misfortune to lose his patient from hemorrhage before he was able to enucleate the tumor. In many of these cases the surgeon began the operation under the impression that he was going to remove a fibromyoma of the uterus. The tumor might be the size of an adult head, filling the pelvis full and extending somewhat into the abdomen, or it might be very much larger. Even after the abdomen was opened and the tumor examined, it was not possible from the condition present to differentiate between post-peritoneal fibromyoma and sarcoma. The author had made the mistake in beginning to enucleate a tumor, believing he had a fibromyoma of the uterus, when in reality it proved to be a sarcoma.

OPEN METHOD OF TREATING FRACTURES.

Dr. Duncan Eve, of Nashville, said that in all cases in which marked comminution of the fragments was present, and when reduction was impossible, in oblique and spiral fractures of the bones of the extremities, operation was justified. Many of the deformities, pseudarthrosis, and loss of function, which follow fractures, would thus in many cases be obviated. The unsightly deformities which so seriously destroyed the usefulness of the part and predisposed to refracture would be prevented. Fractures complicated by severe injury to adjacent structures urgently demanded operation. Under this heading he included fractures in which pressure was brought to bear on neighboring viscera, nerves and blood vessels, fractures associated with dislocations, and fractures involving joints. By exposing the seat of fracture, the accumulated excess of blood or effused serum could escape, and at the same time permit the removal of any soft tissues that might be between the ends of the bone. In a case of comminuted fracture the surgeon could remove loose fragments of bone which had become entirely separated from their periosteal covering. The technic, after obtaining thorough cleanliness, was to make an incision sufficiently large to enable the surgeon to deal effectually with the fragments. The author reported two interesting cases. Operation should be deferred, if feasible, until after the acute symptoms of the primary injury had subsided, namely, from four or five days to a week. Operative treatment should be adopted in compound fractures; also in cases of a crippled fellow limb, of physical or business demands, of deteriorating personal discomfort, and of prospective activity of a perplexing nature, the wisdom of operation could well be considered. Prospective impairment of function and embarrassing delay in recovery invited the consideration of active interference. He was opposed, however, to the policy and the practice of those surgeons who operated only because a bone was broken and irrespective of present dangers or the future benefits to the patient.

THE OPSONIC TREATMENT IN GONORRHEAL ARTHRITIS.

Dr. A. Ravogli, of Cincinnati, reported two interesting cases in which excellent results were obtained by the injection of gonococcic vaccine.

The following papers were also read: "The Differential Diagnosis of Duodenal Ulcer and Gallstones," by Dr. W. D. Haines, of Cincinnati; "Operations on the Gall Bladder," by Dr. Alex. C. Wiener, of Chicago; "Internal Rotation and Lacerations of the Perineum," by Dr. George B. Twitchell, of Cincinnati; "Plastic Tubercular Peritonitis; Report of an Unusual Case," by Dr. Chas. H. Parkes, of Chicago; "Plastic Work on the Urethra; a New Operation," by Dr. G. Frank Lydston, of Chicago; "Sterilized Hands by Total Absolute Abstinence the Only Factor in Perfect Success," by Dr. J. Henry Carstens, of Detroit; "Retroversion and Retroflexion of the Uterus, Causes, Consequences and Treatment," by Dr. Hannah M. Graham, of Indianapolis; "Gonorrhea and Marriage," by Dr. T. M. Reade, of Springfield, Ohio; "Fracture of the Patella, with Report of Six Cases," by Dr. Robert Carothers, of Cincinnati; "Delayed Union in Fractures," by Dr. Chas. Stoltz, of South Bend, Ind.; "Torticollis, Some of its Various Phases," by Dr. Reginald H. Sayre, of New York City; "The Preparation and Post-Operative Care of Surgical Cases," by Dr. L. G. Bowers, of Dayton, Ohio; "The Surgical Treatment of Acute Intestinal Obstruction and Report of Cases," by Dr. W. A. Melick, of Zanesville, Ohio; "Volvulus of the Entire Mesentery of the Small Intestine, with Report of a Case," by Dr. C. E. Briggs,

of Cleveland; "The Sigmoid Factor in Pelvic Diseases," by Dr. J. Rawson Pennington, of Chicago; "Internal Strangulated Hernia," by Dr. E. M. Brown, of Chicago.

MEDICAL SECTION.

ADDRESS IN MEDICINE.

DR. GEORGE F. BUTLER, of Chicago, in this address, discussed the medical men and their influence on human progress, and said that if we were to prevent disease as the chief mission, or as the most effective method of warfare upon this chief enemy of human progress, the conditions must be known, not merely the material, mechanical and social, from which they resulted, but the primary conditions that lay still farther back of the immediate conditions that resulted in diseases.

He discussed the relations between physicians and the public service, and gave considerable attention to the need for a better understanding of the social question, and deplored the danger to innocents of silence and secrecy. He advocated the abolition of state lines with reference to medical practice regulations. Referring to expert witnesses in legal cases, he condemned "expert liars" in strong language. In the medical profession, as in religion or science, the perils of dominating influence could not be escaped. While the evils flowing from industrial concentration could be met, the evils that followed the syndication of intelligence could not be avoided. The struggle of the ages had been the emancipation of truth from authority.

(To be continued.)

MEDICAL JURISPRUDENCE SOCIETY OF PHILADELPHIA.

STATED MEETING, OCT. 21, 1907, AT 8.18 P.M.

DR. WILLIAM M. L. COPLIN in the chair.

EXPERT TESTIMONY FROM THE LAWYER'S STANDPOINT.

ADOLPH EICHHOLZ, Esq., of the Philadelphia bar, read a paper with the above title. He gave a brief analysis of the functions performed by the lawyer and by the expert in the administration of justice. It is admitted that human reason and ingenuity have not yet been able to devise any system through whose operation actual justice will be insured in every litigated case. In cases where there are disputes as to facts, one side or the other may be untruthful in its allegations; or it may be that the two sides have honest differences, which disagreements may be accounted for by differences in perception. Examples of rules intended to hold the scales of justice evenly balanced were cited. The method of trial of causes was indicated in a general way and the position of the expert witness portrayed. The expert, though sworn as a witness, is in reality not a witness. He does not in general testify as to facts, but is supposed to aid the jury in drawing its conclusions by giving his opinion upon certain facts already testified to. He in a measure stands in the same position as the judge who gives his opinion upon the law, but with the vital difference that the Court's conclusions upon the law must be accepted, while the expert's conclusions are not binding. In the case of the expert scientist there is not only the element of honesty and truthfulness which applies to every witness, but there are also to be considered questions as to whether the theory upon which the witness bases his conclusions will stand the test of later scientific research, and whether the witness has used proper care in his investigations in the case under consideration. The danger of the expert becoming an advocate for the side employing him was referred to. Most of the remedies proposed for the improvement of the position of expert testimony were said to relate to what might be called scientific judges who are not employed by either side, in the supposition that some degree of impartiality might be obtained. The suggestion is made, however, that since so much of so-called science is empirical it is doubtful whether an expert should be given such authority as to make his judgment theoretically or practically conclusive.

WILLIAM W. SMITHERS, Esq., emphasized the statement that the expert should not be considered a witness, describing his position rather as a supporter of the mentality of those engaged in the determination of the issue, an assistant merely, the force of which assistance is only secondary to the cause or issue at stake. He thought the tendency prevailed in many causes to magnify the position of the expert, as did the expert as a rule magnify the importance of his particular part of the trial.

DR. WILLIAM S. WADSWORTH strongly urged that the medical expert should have the same recognition and treatment as a legal judge and that there should not be the effort made on the stand to discredit him. The work of the expert in observing facts and in drawing right conclusions was declared to be a necessity. The conditions, therefore, under which the courts worked should be improved.

DR. HENRY BEATES, JR., thought the interest in the question, on the part of the expert, centered around knowledge and honesty, and these two properties too often became the subjects of attack and perversion. The system also of utilizing expert testimony was regarded as often so defective that persons totally unfit were allowed to qualify as experts. He questions whether it is not a faulty method that permits expert testimony to be given by a physician who is interested in the case. Regarding the point made that an exeprt, though sworn as a witness, is not in reality a witness, but one whose function is merely to give an opinion, he believes the sooner such rule is dispensed with the better will it be, since opinions are influenced by environment. He believes that the system of utilizing expert testimony in the bringing of experts on each side, who in a degree must become advocates of their respective sides, emasculates the entire system of its value.

JOHN H. CLARK, Esq., believes that ultimately some method will be devised by which expert testimony will be more satisfactorily made use of. One difficulty in the subject is the kind of men usually found in the jury box.

PASCHAL H. COGGINS, Esq., thought that experts were falsely regarded as impartial witnesses. This impartial position he believes impossible in matters of opinion, the result of special study and long training. The expert should occupy rather the position of counsel, and having reached a conclusion should be at liberty to support it by all his reason and knowledge, and to meet the opinions of the expert on the other side.

DR. HENRY LEFFMAN pointed out that there were two sides of the question and that the expert is largely influenced by the opinion of the individual he represents and the aspect in which he views the case. An illustrative case, and one in which it would seem that experts might have taken either side, was that concerning the taxing of an electrical company upon the ground that it was a manufacturing corporation. In

this case the question arose whether or not electricity was a manufactured product. He believes, on the whole, that the present system of expert testimony is the best and that in the friction of the opposing expert the sparks of truth are ultimately brought out.

Dr. Wilford W. Hawke referred to a commission in the city of St. Louis, composed of physicians who had banded together to give expert testimony free of charge to the city. He cited a case in which two physicians appeared in court as experts and yet who, when their qualifications were questioned, were obliged to say that they had never seen a case of insanity. He spoke of his experience in a recent murder trial in which the Court would not allow him to qualify his statements, which in print might not convey his meaning, upon the ground that he could not give a "medical lecture" in court. The term "psychic epilepsy" had been used, and although both sides agreed as to the mental status of the man, the jury paid no attention to the medical testimony and convicted the prisoner.

Haines D. Albright, Esq., outlined the plan by which experts were obtained for the opposing sides, and thinks that with the evidence brought out in direct and cross examination the system in the long run proved its value.

Dr. John B. Roberts deprecated the present tendency for the fee of the medical man to depend upon the result of the case.

John H. Clark, Esq., thought that a lawyer who takes a contingent fee, pays a fee to a man bringing him a case, or pays a physician for proving his case, cannot be an honest man and ought to be sent to jail.

Mr. Albright spoke in favor of a contingent fee, under certain circumstances, for example, where the party is too poor to pay an attorney and the lawyer assumes the risk of not being paid at all.

Mr. Eichholz, in closing, admitted that it was sometimes difficult for a professional man to express a professional opinion in other than technical words, but urged that the medical man in his expert testimony should remember that he was expected to explain certain things of which others were supposed to know nothing, and that so far as possible technical terms should be eliminated.

An objection to the suggestion that the expert should occupy the position of counsel was the difficulty of having a deciding authority upon the point at issue between the opposing experts.

While the present system of expert testimony may not be ideal Mr. Eichholz believes it the best that so far it has been possible to devise. It is a means of getting at the truth and of deciding disputes. With some method of raising professional standards there would come the possibility of raising the standard of the expert testimony.

Book Reviews.

Essentials of Chemistry and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University. Thirteenth edition, revised by R. J. E. Scott, M.A., B.C.L., M.D. New York: William Wood & Co. 1907.

This small book has been popular with those who have wished to get a general idea of chemistry and toxicology through a system of questions and answers. This thirteenth edition differs somewhat from the preceding ones, particularly in the portion devoted to organic chemistry which has been rearranged and partly rewritten. Of its kind it is one of the best books with which we are acquainted.

Hay-Fever, Hay-Asthma, Its Causes, Diagnosis and Treatment. By William Lloyd, Surgeon-in-Charge of the Nose, Ear and Throat Department, Kensington General Hospital, etc. London: Henry J. Glaisher. Chicago: W. T. Keener & Co. 1907.

This small treatise on hay fever is well written and follows in general commonly accepted views. The author has definite ideas, but they are neither eccentric nor particularly new. His view of the etiology is the familiar tripod, — hyperesthesia, disordered reflexes and the specific irritant. He can detect the hypersensitive areas by sight as well as by touch, and he treats them with the cautery. During the attack he finds the mucous membrane extremely red, where others note that it is commonly anemic. In referring to the work of Dunbar, he apparently misses the interesting theory that the etiological fault in the hay-fever victim is chemical rather than nervous. In regard to treatment there are many suggestions, and several cases are reported cured by cauterization.

A Practical Treatise on Fractures and Dislocations. By Lewis A. Stimson, B.A., M.D., LL.D. (Yalen.), Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson Street Hospitals; Consulting Surgeon to Bellevue, etc. Fifth edition, revised and enlarged; with 325 illustrations and 52 plates in monotint. New York and Philadelphia: Lea Brothers & Co. 1907.

Stimson's great volume of 854 pages is the worthy successor of that by Hamilton, another eminent Bellevue surgeon, who was publishing twenty-five years ago. Stimson's book is addressed to the general practitioner as well as to the surgeon, and is an encyclopedia of the latest and most useful information on his subject. In this fifth edition the author points out especially the notable increase in our knowledge derived from the x-ray, though he might well emphasize the possibility of a fallacious interpretation of x-ray plates by inexpert observers, as well as the danger in trusting for final diagnosis to the cheap commercial x-ray apparatus commonly used by general practitioners. We commend his use of massage in the treatment of fractures, and suggest the great value of the Zander apparatus in restoring function to crippled and contracted joints.

Fractures of the carpal and tarsal bones, dislocations of the semilunar, and fractures of the upper end of the radius receive appropriate consideration. But an extensive review of this valuable work would be inappropriate in this brief writing. Suffice it that the book should be bought and studied by surgeons and general practitioners.

Manual of Diseases of Ear, Nose and Throat. By JOHN JOHNSON KYLE, B.S., M.D., Professor of Clinical Otology, Rhinology and Laryngology in the Medical College of Indiana, etc. Second edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co. 1907.

A review of the first edition of this book appeared in the JOURNAL of Jan. 31, 1907. This early call for a second edition is proof of its acceptance as a satisfactory textbook. A few additions have been made, especially a chapter on the diseases of the trachea and bronchi.

Tracheo-Bronchoscopy, Esophagoscopy, and Gastroscopy. By CHEVALIER JACKSON, M.D., Laryngologist to the Western Pennsylvania Hospital, the Eye and Ear Hospital, and the Montefiore Hospital. Illustrated. The Laryngoscope Co.: St. Louis, Mo. 1907.

The importance of the recent development of the direct inspection of the air passages and esophagus will make this book welcome, and especially as it comes in so excellent a form. It contains about two hundred pages with many illustrations of real value to the context and a few colored plates showing normal and pathological views of the different regions. It contains a brief history of the subject with a complete bibliography, a description of the necessary instruments and apparatus and the proper methods for their use, the important points in anatomy and the principal pathological conditions which may be encountered. To the compilation of the work of others is added the original work of the author, and the results of his experience. Beginning with the work of Killian, whose instruments and methods established bronchoscopy, the writer introduced the small distal lamp of Einhorn's esophagoscope into Killian's tubes, adapted to receive them.

Incidently Killian had given an impetus to esophagoscopy, and Jackson, finding that the distal light was little affected by the length and small caliber of the tube, continued through the esophagus into the stomach. Here he is virtually a pioneer in a new field. Previous gastroscopes have been complicated and of no practical help in diagnosis, to say nothing of treatment. An outline of what the writer has done in this direction appears here, and a fuller description is promised in a future book.

The author in addition to his ingenuity in the making of instruments, and sound judgment in the treatment of cases, is a master in the arrangement of details, and the clear explanation of these details adds much to the value of the book. The position of the patient and the assistants, the care and handling of the apparatus, the management of anesthesia, are matters which in direct inspection through long tubes make the difference between success and failure. In Europe, the small distal lamp has not yet gained headway; in this country the impetus which it has received is due largely to Jackson. Whether or not this method of illumination becomes universally adopted, there is no doubt that in his hands or under his instruction it is capable of excellent results.

A Text-Book of Embryology for Students of Medicine. By JOHN CLEMENT HEISLER, Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. Third edition, thoroughly revised. Philadelphia: W. B. Saunders Co. 1907.

Professor Heisler's Embryology has met quite successfully the need for a not too elaborate manual for the use of medical students. It is well arranged and clearly written, though it is by no means so accurate as to have complete value as an authority. The titlepage states that this is the third edition, "thoroughly revised." Most of the electrotype plates have been untouched, but here and there a new page has been inserted and occasionally new paragraphs. These are always so grouped as to make an even number of plates, and by this device the old electrotype plates can be largely used for reprinting. The thorough revision, therefore, would be more correctly described as the interpolation of twenty new pages. By this commercially advantageous method, the third edition has really been improved, as the results of some recent investigations have been added to the volume, bringing it nearer to the standard of what such a work ought to be. The intention has evidently been to adapt the book as much as possible to cramming, for pages are everywhere marred by printing the leading words in heavy-faced type. When this is done, we may usually feel pretty sure that neither the author nor the publisher has wished to produce a textbook of first-class scientific excellence.

Lectures on Diseases of the Lungs. By JAMES ALEXANDER LINDSAY, M.D., F.R.C.P. (Lond.), M.A., Professor of Medicine, Queen's College, Belfast; Physician to the Royal Victoria Hospital, Belfast, etc. Second edition, enlarged and rewritten. New York: William Wood & Co., 1906.

The lecture form is retained in this second edition. The lectures on heart disease in the first edition are omitted in the second and the entire space given to pulmonary disease. Practical diagnosis and treatment are the chief considerations, and the work is intended as a supplement to rather than as a substitute for the ordinary textbooks. Methods of physical examination and general symptomatology are considered in the first 128 pages. Pleurisy, empyema, pneumonia and bronchitis occupy about one hundred pages. Pulmonary tuberculosis is discussed in 182 pages, and the balance of a book of 496 pages deals with other forms of pulmonary disease.

The book is written in a clear, simple style. Conflicting theories are discussed in a judicial manner; the author's own opinion is always evident and its basis is usually stated. The discus-

sion of treatment is in accord with present therapeutic tendencies. It is rational and a good mean between the nihilistic tendencies of some and the irrational drugging of others. The limitations of therapy are clearly stated, but there is no pessimism as to the value of treatment. The introduction of definite directions as to dosage and drug combinations which have proven efficacious in the hands of the author would have been an improvement, and might be expected, particularly as the book is in large measure a statement of the author's individual experience. To the younger student this will prove a defect in an otherwise very excellent book. Grocco's sign should receive more than the author's passing mention, for in the reviewer's experience it has proven of much value.

Such a book will not be of great service as a book of reference, but to the reader, whether student or older practitioner, it will bring much information presented in a very practical, common sense form, and of a nature that can be put into immediate use in connection with his daily patients. Typographical errors are very rare in the book. There are no illustrations, but the bookmaking has been well done

A Text-Book of the Practice of Medicine. By Hortba Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, etc. Second edition, revised and enlarged. Philadelphia and New York: Lea Bros. & Co. 1907.

The second edition of Hare's Practice appears in enlarged form. The work is a combination of judicious selection from medical writers with original observations and statistics. It is illustrated with numerous original or borrowed charts and pictures. The latter are distinct and illustrative, numerous enough, but still play a minor rôle to the text, as should be the case in a book of this character. The work of revision has been done in a manner to maintain the position won by the first edition, and the newer points of view based on recent investigations have been incorporated.

The book is well printed. The binding might be better, for the reviewer's copy showed defects after but little handling. A heavier binding would have been better for such a large book. However, the massive tomes that the American publishers inflict on the medical public is a just cause for protest. The prejudice among the publishers against handy volumes seems deep rooted. To hold these books while reading is a source of physical fatigue that always detracts from the pleasure of using American texts. Hare's book should appear in two volumes, at least, and a gain in lightness by using a flimsy binding on the one large volume is not a satisfactory substitute. The foreign custom of putting books on the market in paper covers to be bound according to the readers' taste has much in its favor. This criticism, however, is of the publisher, not of the author.

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RURAL LIFE FOR THE RESTORED CONSUMPTIVE.

One of the most difficult problems related to the anti-tuberculosis propaganda is how to dispose of the convalescent and of one in whom the disease has been arrested. The consumptive is restored to a very measurable degree of health in the sanatorium, the tent-farm or the *colonie agricole;* but to continue him under such salutary influences is either most difficult, or oftentimes quite impossible. Sometimes he is naturally unfit for agriculture; but in deplorably many cases he returns by choice and not by necessity to the baneful conditions under which he has contracted the disease, with the result that the arrested tubercular processes are excited anew.

Those in charge of the French hospitals for tuberculous children have to cope with the unwillingness of their young graduates to do light farming and outdoor work; their preference is generally to return to the slums from which they were mercifully taken when they were grievously ill. On returning to these unsanitary and perhaps vicious environments they are likely to redevelop the lesions that have been healed in the benignant rural atmosphere. At Villiers a *colonie* was established in which convalescents were to be taught farming and gardening; it was greatly hoped that boys restored to health would there become attached to a country life, and would be got away from baneful urban surroundings. It was found, unfortunately, almost impossible to retain them; they would not settle down happily to farm life. At Noisy-le-Grand, where only girls suffering from tuberculosis are cared for, a similar endeavor has been made, with no better success, and for the same reason.

Senator Jules Maline[1] has presented a study of the merits of agricultural as against urban life in France, which well deserves perusal by those interested in similar conditions in America. He recognizes that men will return to the land in great numbers only when the balance of human satisfaction is in favor of the country. It avails little to argue that the wealth of a people lies in its agriculture. "The problem involves much more than the simple question of financial profit and loss; so long as workingmen living in dark tenements forget their sordid surroundings at the sight of parades, picnics, political meetings, cheap theatricals, gay saloons and hurdy-gurdies, while their rustic relatives have to go to bed at seven for sheer weariness and lack of diversions, the cityward rush will not abate."

Other difficulties are revealed in the important report made by the Committee on the Prevention of Tuberculosis of the Charity Organization Society of New York City. It was sought to find places in rural districts for those strong enough to do light work. Farm help is always badly needed; yet the farmers cared little for the work of the convalescent or cured consumptive, except at a very low wage. Healthy men ignorant of farming could be taught; those who knew about farming but were ill could be given light tasks while strength should be returning. But there was no demand for men both weak and untrained, who were driven to soil only by disease. The committee next considered tenant houses standing vacant on farms. Such a house with spring or well water, and a large garden plot, with as much firewood and fruit as would suffice for a family's needs could be had for two or three dollars a month. Among 60 who desired such living conditions, 43 were rejected because of drunkenness, shiftlessness or physical inability; only 10 found places, of whom but 2 were entirely successful, 2 were partly so, and the remaining 6 were failures.

The committee concluded that indigent consumptives can occasionally be placed in suitable country employment with very good results; that comparatively few desire such work sufficiently to apply for it, and that most among such applicants are absolutely unfit, either by medical or social reasons, or both, for such work. Incipient cases in good physical condition can with difficulty be persuaded to give up their city employment; yet tradesmen and artisans who have been consumptives should find most congenial occupation in small semirural towns and villages.

[1] The Return to the Land. Published by E. P. Dutton & Co.

It is furthermore evident that physicians and those concerned with the care of the tuberculous should not send these patients to the country to shift for themselves; nor will any plan be feasible which should lack facilities for the careful adjustment of work to the physical abilities of the individual.

It is, indeed, a strange phase of human nature that city slums, with their squalor and their hideously unsanitary conditions, should be preferred to the restfulness, the peace and the healthfulness of the country; especially is this to be wondered at in the young, who should take most naturally to the fields, birds, flowers and brooks. Strange, too, is the situation when throughout these United States farming is carried on under the greatest difficulty, because laborers cannot be got to till the fields, while many thousands of idle men in cities complain that they are starving; when innumerable small investors are deterred from going into farming by reason in large part of the difficulty of coaxing laborers away from the industrial centers.

It must be explained to those who fear the monotony of country life that rural conditions have vastly changed in the last thirty — indeed, in the last ten—years. "There are hundreds of charming villages from Maine to California which can offer laborers and small farmers almost as many pleasures and social advantages as the large cities can; the spread of trolley cars and telephones has turned vast regions of farming land into suburbs." When we add to these agreeable features, village libraries, clubs, lyceums and the rural free delivery we are well in a position to assure the restored consumptive that in exchanging the vicious conditions under which he has contracted the disease for existence in the country, he has no occasion to contemplate a lonely life.

TUBERCULIN IN DERMATOLOGY.

TUBERCULIN, like any toxin, merely requires to be given in proper doses, and, when once these are known, it can certainly render considerable service. This is what now appears to be transpiring in dermatology, and Schmitt has brought the question up-to-date in his Paris thesis.

It would appear preferable to employ the older tuberculin (tuberculin A. T.) which gives far more distinct reactions than the other preparations, notably than the new tuberculin (T. R.) of Koch. On the condition that the subject to be treated by tuberculin presents no contra-indica-

tions for its use, such as a visceral focus of tuberculosis, especially pulmonary, and if one begins with extremely small doses, such, for example, as one decimilligram, many important diagnostic or topographic indications as to the cutaneous lesion may be obtained. If one progressively increases, and at the proper time, the dose, one will be able to determine that dose which will give rise to a local reaction with a minimum general reaction, which will be the therapeutic dose for a given patient.

It is known that injections of tuberculin produce reactions of two different kinds, namely, a local reaction, which takes place in and about the cutaneous lesions, and a general reaction principally characterized by fever, one or more chills and a general condition of malaise. Schmitt has studied these manifestations and his researches are corroborated by Martial. The latter has used tuberculin, not from the standpoint of diagnosis, but in order to determine the real extension of lupus, for example. The lupomata do not always make themselves manifest by apparent cutaneous lesions. Around a visible focus of lupus there are invisible elements which can only be detected by the use of tuberculin, and from the extent of the reaction produced one may judge of the real extent of the lupus, so that one may treat the diseased surface thus put in evidence, and not merely the apparent lesions.

Unna has used a soap containing tuberculin for local treatment of various cutaneous tuberculoses. It has as a base potassium, to which is incorporated the toxin and is employed *in loco*. Mattan-Larier and Marmorek have advised employing the indirect tuberculin reaction, the principle of which is to employ an animal as the intermediary reactive before injecting in the human subject. Wright and Douglas have employed the T. R. tuberculin, considering it as a stimulant in the production of anti-tuberculous substances or those substances which protect against the attacks of the bacillus, and they have discovered a special substance in the blood which they call opsonin, which renders the elements of the blood apt for phagocytosis. Tuberculinization of an individual will increase the quantity of opsonin contained in the blood, and this new application of T. R. tuberculin is being studied on a large scale, both at home and abroad.

Several theories have been emitted to explain the so favorable action of tuberculin on cutaneous lesions and the so unfavorable on visceral lesions. It would appear that, according to histologic examination, the reactionary inflammation set up by the tuberculin around the tuberculous elements has as an effect to provoke their enucleation, and when the bacilli-containing tissues have been eliminated, cicatrization will take place more rapidly.

Unfortunately, it appears that tuberculin does not possess an absolute diagnostic value. The reaction takes place in nontuberculous lesions, and, on the other hand, this does not take place in all cases of true tuberculous lesions. This question is difficult to settle, because it may be well questioned whether the experimenters have placed themselves in the necessary conditions for the test and also whether the tuberculin that they employed really possessed a power of reaction sufficient or not. Given what we now know of the diagnostic value of the local reaction, it is rather astonishing that Schmitt concludes, with Landouzy, that it can absolutely settle the question in cases of tuberculides, a question that has been recently discussed by Darier, Leredde and Pautrier. Schmitt relates twenty-two cases of lupus and tuberculomata treated by injections of tuberculin and shows that the therapeutic value of this agent in dermatology is still more questionable than its diagnostic value. Certainly, among these cases which are all interesting, there are some where a very great improvement was obtained and a cure in some *nearly* resulted. But to nearly obtain the cure of a lupus means a nearly certain recurrence and in all the cases reported by Schmitt the cure was only temporary and often other medications had to be resorted to. He concludes, however, that the use of tuberculin is quite legitimate in the therapy of cutaneous tuberculosis, either in conjunction with other methods of treatment, or, as a last resource, when all else has remained powerless to control the lesions.

MEDICAL NOTES.

Whooping Cough at Statington, Penn. — It is announced that there are upwards of three hundred cases of whooping cough in Statington, Penn., and that the epidemic is spreading.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 20, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 51, scarlatina 41, typhoid fever 18, measles 8, tuberculosis 28, smallpox 0.

The death-rate of the reported deaths for the week ending Nov. 20, 1907, was 15.06.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 23, 1907, was 198, against 190 the corresponding week of last year, showing an increase of 8 deaths and making the death-rate for the week 16.94. Of this number 94 were males and 104 were females; 195 were white and 3 colored; 111 were born in the United States, 76 in foreign countries and 11 unknown; 40 were of American parentage, 136 of foreign parentage and 22 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 41 cases and 6 deaths; scarlatina, 44 cases and 0 deaths; typhoid fever, 14 cases and 1 death; measles, 12 cases and 0 deaths; tuberculosis, 37 cases and 21 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 25, whooping cough 0, heart disease 32, bronchitis 3 and marasmus 2. There were 15 deaths from violent causes. The number of children who died under one year was 29; the number under five years, 40. The number of persons who died over sixty years of age was 42. The deaths in public institutions were 59.

There was 2 cases and 0 deaths reported from cerebrospinal meningitis during the week.

BEQUESTS. — Among many institutions benefited by the will of the late Lyman F. Rhoades the Lynn, Mass., Hospital received $5,000, the Home for Aged People in Winchester, Mass., $1,000, and the Memorial Home for the Blind in Worcester, $2,000.

ANNUAL MEETING OF BOSTON TUBERCULOSIS ASSOCIATION. — The annual meeting of the Boston Association for the Relief and Control of Tuberculosis was held Nov. 19, and the following officers unanimously re-elected: President, Dr. E. O. Otis; Vice-President, Dr. Arthur K. Stone; Clerk, Mrs. Mary Morton Kehew; Treasurer, George S. Mumford.

DIPHTHERIA IN ROCKLAND, MASS. — One of the schools in Rockland, Mass., has been closed for the second time in a month, because of an outbreak of diphtheria. This school, numbering 400 pupils, is the largest in the town. There are about fifteen cases of diphtheria of a very slight form now under observation.

WORK FOR THE INFIRM. — A meeting has recently been held, in Boston, in which Dr. Joseph H. Pratt and other physicians and laymen are interested, to consider the possibility of making it easier for the physically and socially handicapped to obtain employment. Among those who attended and spoke were Mr. C. C. Carstens, of New York, and Dr. Charles P. Putnam, Rev. Elwood Worcester and Dr. John B. Hawes, of Boston. A committee was appointed for the purpose of considering a permanent organization. Another meeting will be held next month.

LECTURES ON THE PROTOZOA. — Prof. Gary N. Calkins, of Columbia University, is giving a series of eight lectures in the Lowell Institute course in Boston. Five of these lectures have already been given, concerning themselves chiefly with a discussion of the protozoa in their biological aspect. Three lectures remain to be given on Nov. 29, Dec. 3 and Dec. 6, which should be of special interest to physicians. The titles of these three final lectures are: Protozoa and Pathology: Malaria and Sleeping Sickness. Protozoan Parasites of Dysentery, Hydrophobia and Smallpox. Some Doubtful Protozoan Diseases; General Conclusions.

NEW YORK.

CENTENARIANS. — Daniel Ellison, of Freeport, Long Island, N. Y., died on Nov. 17 at the age of one hundred years. He was the oldest resident of Freeport, and as "Uncle Daniel" was long well known throughout the south side of the island and among the baymen and fishermen.

Mrs. Sophia Ackerman, who was one hundred and one years old on Oct. 28, died at her home in Bloomfield, N. J., on Nov. 18. She survived her husband by twenty-two years, and leaves 2 sons, 2 daughters, 12 grandchildren, and 22 great-grandchildren.

JEWISH HOSPITAL SOCIETY.— The annual meeting of the Jewish Hospital Society, of Brooklyn, was held on Nov. 17. Its hospital building was dedicated on Dec. 6, 1906, and from that time up to Nov. 1, 1907, 1,112 patients had been treated. Its present equipment is for 108 beds, but, in full operation, it would have a capacity of 160. The directors have purchased adjoining property, on which it is purposed to build a nurses' home and, in the course of time, an additional wing to the hospital, which will accommodate 100 more patients. The directors have also organized and had incorporated a separate society, The Training School for Nurses of the Jewish Hospital, of Brooklyn.

PASTEURIZATION PLANTS. — Nathan Strauss, of New York, having established at his own ex-

pense, pasteurization plants in Berlin and other German cities, is now devoting his attention to similar work in England, and has offered to give to towns willing to accept them at least twenty-five plants, costing $1,000 each. He has invited Dr. G. Moore, at present Medical Officer of Health, of Huddersfield, one of the great manufacturing towns in the north of England, to devote his entire time, at a handsome salary, to installing and overseeing pasteurization plants in such municipalities as will undertake the cost of their maintenance; and it is understood that Dr. Moore will accept the position.

Examination of Police Officers. — In the New York Supreme Court in Brooklyn, on Nov. 12, Justice Burr rendered a decision to the effect that a considerable number of captains and lieutenants whom Commissioner Bingham had retired from the police force, after they had been examined and pronounced unfit by the Board of Police Surgeons, had been retired on insufficient evidence, and that the reports of the examining surgeons were not sufficiently specific. The judge therefore ordered that the cases should be sent to a jury and that expert evidence be called for. It will rest with the jury to decide, after hearing opinions on both sides, whether the officers are really incapacitated, either physically or mentally, for active service. It is understood that the Police Department will appeal from this decision, on the ground that in the retirement of the officers every step was taken in compliance with the provisions of the city charter.

The Charity Organization Society. — As an appropriate way of celebrating the twenty-fifth anniversary of its foundation, the Charity Organization Society planned and carried out a conference on the betterment of living conditions, commencing Nov. 19, and lasting three days. The opening session was held, in the presence of a large audience, at Carnegie Hall, and on this occasion addresses were made by the President, Robert W. De Forest, Governor Hughes, Mayor McClellan, Jacob H. Schiff representing the United Hebrew Charities, and Dr. Emil Münsterberg, President of the Department of Public Charities of Berlin. The last named, who is brother of Dr. Hugo Münsterberg, Professor of Psychology in Harvard University, had crossed the ocean expressly to attend the conference, going back to Europe on the return trip of the same steamer by which he came over.

A Commissioner of Street Cleaning. — Mayor McClellan has appointed Foster Crowell, a prominent engineer, Commissioner of Street Cleaning, in the place of Dr. Walter Bensel, of the Health Department, resigned. In his letter accepting the latter's resignation the Mayor says: "I part with you most regretfully, and am only consoled by the thought that in the resumption of your life work as Sanitary Superintendent, the city will still have the benefit of your experience, your knowledge and your ability. During the four and a half months of our intimate association I have never been obliged to comment upon your work, except to praise. You have reorganized the Department of Street Cleaning, contented your men, satisfied the public and — cleaned the streets. May your future be as useful and as honorable as your past."

It may be remembered that Dr. Bensel accepted this difficult and trying position only with the distinct understanding that it was only for a period of three months. At the expiration of that time, as the Mayor had not yet been able to fix upon the right man for the place, he consented to serve until a successor had been appointed. As Mayor McClellan intimates in his letter, Dr. Bensel's management of the department has met with the marked approval of the community at large. Assuming the duties of its head at a time when it was largely demoralized by a formidable strike among the employees, which paralyzed the collection of garbage and other work in midsummer weather, he soon brought order out of chaos, and it is generally acknowledged that he has made the most efficient Street Commissioner since the late Colonel Waring, who organized and carried out new plans and methods which have been successfully adopted in various other cities.

Current Literature.

Medical Record.
Nov. 2, 1907.

1. Block, S. *Mental Defectives; an Attempt to Treat Some Cases with Medicines.*
2. *Collins, J. *Acute Anterior Poliomyelitis or Acute Spinal Paralysis of Children.*
3. Sheitlis, D. *Streptococcemia Accompanying Appendicitis.*
4. *Gould, G. M. *Study of a Case of Two-handed Synchronous Writing.*
5. Roy, J. M. *Primary Melanosis of the Palate; Nasobuccal Fistula of Recent Sarcomatous Origin.*

2. Collins reviews the history of recent epidemics of this disease, and discusses its clinical manifestations, particularly as observed during the present epidemic in New York

City and its environs. He estimates that already there have been more than one thousand cases, but as yet nothing definite has been learned in regard to the etiology of the disease. A noteworthy feature of the epidemic has been the number of cases in which a fairly good recovery has resulted; that is, in which there has been little or no muscular atrophy. The explanation of this is that the inflammation in the anterior horns is not so intense as to destroy the cell bodies and nutritive processes of the peripheral motor neurons. In order to secure data to aid in investigating the etiology of the disease, Collins urges physicians who see the patients early to send lumbar-puncture fluid, urine and feces to those who are equipped to study them adequately. Later on in the disease there is less hope of discovering facts of importance.

4. Gould says that mentality preceded and created structure. It has been shown that the mechanisms that give man external validity, speech and writing are one-sided. This one-sided differentiation is progressive throughout life. Right-handedness is partially a matter of right-sightedness. In 97% of children the right eye is the better seeing eye. If one is right-handed the centers for writing and speech must be on the left side, and the visual centers on the same side. Pathology follows any attempt to interfere with right or left-handedness. Those persons who demand right-handedness of the left-handed child make him morbid and maladroit. The author gives several very interesting cases of the life-long crippling of the faculties and mechanism of writing resulting from attempts to make a left-handed person learn to use the wrong side of his brain for writing.

[NEW YORK MEDICAL JOURNAL.
NOV. 2, 1907.

1. PORTER, E. H. *Address in Sanitation.*
2. NEWMAYER, S. W. *Physical Defects of School Children, Causing Subnormal and Mentally Deficient Pupils.*
3. BOGGS, R. H. *Protection of Patient during Roentgen Exposure.*
4. WHITE, J. V. *Diet in Tuberculosis.*
5. POPE, C. *The Treatment of Anemia.*
6. MERENESS, S. A. *On the Making of a Physician.*
7. KIRBY, F. B. *Hyoscine Hypodermic Anesthesia.*
8. LANE, J. E. *A Case of Profuse Renal Hematuria.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
NOV. 2, 1907.

1. *STILES, C. W. *The Three-Class (Freibank) Meat System as an Aid in Eradicating Tuberculosis.*
2. *HAMILL, S. M. *Percussion of the Chest in Infants and Children.*
3. BEEBE, S. P. *The Growth of Lymphosarcoma in Dogs. Summary of Recent Observations.*
4. *BEEBE, S. P., AND TRACY, M. *The Treatment of Experimental Tumors with Bacterial Toxins.*
5. MCCONNELL, G. *The Experimental Production of Epithelial Proliferation.*
6. KÜSTER, D. *Osteoplastic Operations.*
7. WARD, G. G., JR. *Prolapse of the Ovary and Its Treatment.*
8. CARSTENS, J. H. *Ovary and Tube and Ovarian Tumors in the Inguinal Canal. Rare Condition. Report of Two Cases.*
9. GRADY, R. *The Dentist in the United States Navy.*
10. BOSTON, N., AND BLACKBURN, A. E. *Erysipelas.*
11. PISEK, G. R. *The New Era in Pediatrics; Its Causes and Scientific Foundations.*

1. Germany and some of the other continental countries have used for years a three-class meat system. In this country we have only two classes, — meats passed for unrestricted sale and condemned meats. The additional class, or Freibank class, includes meats which are passed for sale under restrictions. Much of the meat of a tuberculous animal, properly inspected, could, instead of being thrown away, be classed as Freibank and sold. The tuberculous lesions are often localized and can easily be cut out. Certain other meats can be used with safety provided they are cooked. This third class, or Freibank class, would give the poor classes a good safe meat, as it must be inspected, and at a much reduced price. Probably on the removal of the dread of complete loss the local butchers, to whom the federal law does not apply and who are able to sell actually bad meat uninspected, would apply for inspection. Moreover, with the Freibank class the dairyman would get some return for his tuberculous cows, and would be the more ready to co-operate with the movement to eradicate tuberculosis from his herds.

2. Hamill thinks percussion is much neglected in infants and children. He emphasizes the necessity of proper technic. He prefers light percussion, using the finger-finger method, but placing only the terminal phalanx of the percussed finger against the chest wall. Position is of great importance. The two sides must be absolutely symmetrical, with the head straight. The muscles should be completely relaxed, otherwise abnormal dullness from contracted muscles occurs. For percussion of the front of the chest, the infant or child is laid flat on the back. For percussion of the back the child either sits up or is held by a nurse. If too sick for this procedure, the child is turned from side to side, but comparison is made only from the two sides in the same position, *i. e.*, free side with free side. Some of the differences in percussion of infants from percussion in adults are that the apices in infants are relatively less resonant, due to the imperfect development of the apices, that there is no pulmonary resonance under the sternum in infants, and that in early life there is in the left chest behind and beneath the inner third of the clavicle a relatively dull area depending on the posterior position of the lungs and consequent proximity of the great vessels. In infants the writer percusses the relative dullness, the actual size of the heart, which is higher and more horizontal than in adults.

4. Beebe and Tracy investigated the action of the toxins of various bacteria on experimental lymphosarcomata in dogs. Suspensions of the B. prodigiosus seemed to have the most marked effect. Suspensions of the streptococcus pyogenes and the B. coli communis were also effective. Suspensions of staphylococcus pyogenes aureus and the soluble toxins of the B. prodigiosus had no effect on the tumors. The inoculations were given as a rule directly into one of the tumors. When any effect was observed, not only the tumor at the site of inoculation, but the other tumors diminished in size and finally apparently disappeared completely in a few months. [R. I. L.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.
SEPTEMBER, 1907.

1. GOLDWATER, S. S. *Dispensary Ideals: with a Plan for Dispensary Reform Based upon the Adoption of the Principles of Restricted Numbers.*
2. *LAMBERT, S. W., AND FOSTER, N. B. *Benign Stenosis of the Pylorus.*
3. ROBINSON, B. *Heart Clot in Pneumonia.*
4. *SEWALL, H., AND CHILDS, S. B. *The Interpretation of X-ray Pictures as an Aid to the Early Diagnosis of Thoracic Aneurysm.*
5. POTTENGER, F. M. *The Relative Value of High and Low Altitude in the Treatment of Tuberculosis.*
6. *ESHNER, A. A. *The Relations between Diabetes and Pregnancy; with the Report of a Case of Diabetes in which the Glycosuria Disappeared with the Inception of Pregnancy and Reappeared after Delivery.*
7. *ELLIOTT, A. R. *Hyperthyroidism.*
8. MUNRO, J. C., AND GODDARD, S. W. *Pyelonephrosis of a Supernumerary Kidney.*
9. RICHARDS, F. H. *Tendon Transplantation and Nerve Anastomosis.*
10. STANTON, W. B. *The Pleural Pressure after Death from Tuberculosis. A Preliminary Study.*
11. ROTCH, T. M., AND GEORGE, A. W. *A Study of Normal Living Anatomy in Early Life.*
12. EPSTEIN, A. A. *The Use of Ammonium Oxalate in Blood Culture Technic.*

2. Lambert and Foster report 11 cases of benign stenosis of the pylorus in adults from various causes other than the scars of ulcers. In 6 cases the stenosis was due to increase in fibrous tissue, in 3 to adhesions about the pylorus, in 1 to pressure from enlarged abdominal glands, and in 1 to a myoma of the pylorus. These diagnoses were all based upon operative findings. Tests of gastric secretion gave results showing in some cases hyperacidity or hypersecretion, and in others achylia gastrica; it is inferred that excessive secretion is more common in earlier

cases and achylia in those of long standing. No mention is made of tests of motor function. In treatment, for cases of mild grade, medical measures may be given a trial, pyloric irritability being reduced by unstimulating diet: olive oil before meals and extract belladonna, gr. i, after meals, muscular activity being stimulated by extract of ergot, gr. i, after meals; electricity or systematic lavage, and secretion being decreased or stimulated according to the demands of the case by bismuth or oxide of magnesium and bland diet on the one hand, or by dilute mineral acids in frequent small doses, with stimulating diet on the other. But in all cases of any severity, resort should be had to surgery without undue delay. Of the 9 cases reported where results were known, 6 were cured and 2 partially cured; 1 case died of post-operative peritonitis.

4. Sewall and Childs call attention to the general failure of the medical practitioner to recognize aneurysm except in its late and unmanageable stages. As Osler has said, the symptom of pain is an early common manifestation, but even before this there may be pressure symptoms or signs, such as dyspnea, cough, hoarseness from laryngeal paralysis or diminution of breath sounds over one lobe of a lung. In any obscure disorder of the chest, especially where there is a history of syphilis, aneurysm should be thought of. The skiagram and fluoroscope should then be employed. But it must be remembered that by untrained observers aneurysm is frequently diagnosticated when it does not exist. The patient or screen may be improperly placed so as to give a distorted image; anomalies, tortuosities and dilatations of the aortic arch may occur; pulmonary vessels, bronchi and bronchial glands may cause confusion; pulmonary tuberculosis, pneumokoniosis and thickened pleura, especially the mediastinal pleura, may also give appearances which can be distinguished only with difficulty from aneurysm.

6. Eshner has made an exhaustive summary of the literature of diabetes in its relation to pregnancy. Much evidence exists of diminished power of assimilating carbohydrates in pregnancy. So marked is this that transitory glycosuria toward the end of pregnancy or during the puerperium may be considered physiological. True diabetes, however, as a complication of pregnancy is rare, since diabetes is less common in women than in men, since diabetes usually occurs later in life than the child-bearing period, and since diabetes as a rule inhibits conception. Yet a considerable number of cases are on record of pregnancy complicated by diabetes, and some cases are reported in which diabetes occurred in successive pregnancies. When diabetes and pregnancy coexist, the diabetes as a rule becomes worse and the pregnancy is seriously interfered with, the fetus often dying *in utero* or soon after delivery, and miscarriage or premature delivery being frequent. The child may be diabetic. Hydramnios is frequent. As an exception to the general rule that diabetes is aggravated by pregnancy, Eshner reports a case of diabetes in which the glycosuria disappeared with the inception of pregnancy and reappeared only after the delivery at about term of a macerated fetus. He finds no parallel case in the literature.

7. Elliott's article deals with those forms of thyroid toxemia which do not amount to true Graves's disease, but yet can be traced to morbid overactivity of the thyroid gland. Disorders due to such conditions Elliott believes to be more frequent than is recognized. He mentions a number of cases illustrating the types of symptoms which may be encountered, and the various predisposing circumstances upon which hyperthyroidism may supervene. The thyroid probably bears some functional relation to the organs of generation; disturbances in the sexual life of a patient may induce enlargement of the thyroid with temporary symptoms of thyroid intoxication. In some cases of simple goiter there are toxic outbursts manifested by nervousness, tremor and tachycardia. Heart disease, especially lesions of the mitral valve producing venous engorgement, is often the apparent cause of thyroid hyperactivity. Of great clinical interest is the association of hyperthyroidism with toxic conditions, digestive, uremic, or infectious. Tuberculosis is often accompanied by symptoms which suggest a thyroid source. More striking still, according to recent statistics, is the frequency with which hyperthyroidism or Graves's disease follows acute articular rheumatism and other acute infectious diseases.

[F. W. P.]

Surgery, Gynecology and Obstetrics.
October, 1907.

1. *McArthur, L. L., and Hollister, J. C. *A Report of a Series of Investigations Covering Work of the Last Eight Months Made with a View to Determine the Value of Vaccine Therapy in the Treatment of Surgical Infections.*
2. Waiss, G. C. *Hysterectomy for Hemorrhage. Report of a Case of Vaginal Hysterectomy for Uncontrollable Uterine Hemorrhage Due to Pregnancy Changes at the Placental Part of the Uterus.*
3. Lydston, G. F. *A Case of Pugilist's Ear.*
4. *Hilton, D. C. *Appendicitis Complicating the Puerperium, Including a Review of the Literature of Reported Cases.*
5. Jacobson, J. H. *A Simple and Effective Self-Retaining Abdominal Retractor.*
6. Hepperlin, H. M. *A Simple Method of Intestinal Anastomosis with a Single Ligature and Two Needles.*
7. *Walker, G., and Fisher, W. *Eight Cases of Suprapubic Prostatectomy; Complete Relief of Symptoms and Perfect Functioning of the Bladder.*
8. *Berg, J. *On the Treatment of Ectopia Vesicæ.*

1. Clinical and laboratory study in Chicago seems to show that determination of the opsonic index is of occasional value in the diagnosis of obscure infections, and, combined with the use of bacterial vaccines, is of distinct value in the treatment of infections with the staphylococcus and of certain chronic localized forms of tuberculosis. Results are less definite in infections with the gonococcus and colon bacillus. In tuberculosis the combination of Bier treatment with vaccine therapy is found further to raise the opsonic index of fluids in the affected part. There are abundant charts, tables and case-reports and good descriptions of technic.

4. Appendicitis during the puerperium has been noted only in recent years. Hilton believes, but does not satisfactorily prove, that there is a direct causal relation, anatomic, physiologic, or mechanical, between the two. Certainly some of the cases cited represent pelvic abscess from neglected obstetric infection. Nevertheless, whether the relation be etiologic, secondary, or accidental, there is obvious importance in the prompt diagnosis and proper treatment of appendicitis coincident with the puerperium, when its recognition is especially difficult.

7. The report of eight highly successful cases of suprapubic prostatectomy raises the old question of the preferability of this method of operation to that by the perineal route. The most striking consideration in this series is the promptness with which the wound closes and normal micturition begins. Notable points in technic are early removal of suprapubic drainage and closure of the wound only at the upper angle, leaving at least half to granulate.

8. Berg describes his operation for extrophy of the bladder by bilateral iliac osteotomy with complete closure of the defect and his modification of Trendelenburg's method of ureteral implantation. He believes each operation has its peculiar advantages and indications. He further suggests an "ideal" operation combining the merits of both.

[R. M. G.]

The Lancet.
Nov. 2, 1907.

1. *Wright, A. E., Douglas, S. R., Freemen, J., Wells, J. H., Fleming, A., *et al. Studies in Connection with Therapeutic Immunization.*
2. Goldmann, E. *The Growth of Malignant Disease in Man and the Lower Animals, with Special Reference to the Vascular System.*
3. Lang, P. H. *A Case of Ruptured Bladder; Operation Forty-two Hours after the Accident; Recovery.*
4. Malcolm, J. D. *A Case of Injury and One of Exposure of the Bladder in Operations for Femoral Herniæ; Recovery in Both Cases.*
5. Owen, E. *A Case of Injury to the Bladder whilst Operating on a Femoral Hernia.*

1. Wright and his fellow-workers present an interesting report of their work on the treatment of bacterial diseases by vaccines. The paper is divided into two parts; the first part treats of certain hitherto unregarded points in

connection with immunization curves obtained by bacterial inoculations. They then speak of auto-inoculations in very early tuberculosis, and show that there is an intimate relation between auto-inoculation and auto-immunization on the one hand, and the clinical symptoms of the patient on the other. They relate some very interesting effects of massage and of active muscular movements (including respiratory exercises) on the focus of infection, and incidentally on the opsonic index; the effect of operative interference on local foci and lastly the effect of active and passive hyperemia on these foci are discussed. They publish thirty-nine clinical records and opsonic charts. In part two they give the details of their methods of inducing auto-inoculations and the value of such methods in diagnosis and treatment. The paper shows evidence of careful, thorough, painstaking and yet very brilliant work. Their results certainly go to show that in an institute such as the one of which Wright is in control, where the opsonic index can be taken accurately by thoroughly trained workers, this method is of value to control the vaccine injections and in diagnosis. [J. B. H.]

BRITISH MEDICAL JOURNAL.

NOV. 2, 1907.

1. SEMON, F. *English and German Education; a Parallel.*
2. SKERRETT, F. B. *The Cancer Problem; a Suggestion.*
3. BAILEY, C. F. *An X-Ray Method for Immediate Localization of Foreign Bodies.*
4. RENSHAW, K. *Case of Radical Mastoid Operation with Subsequent Infection and Rupture of the Lateral Sinus.*
5. CROFTON, W. M. *Treatment of Delayed Resolution after Pneumonia.*
6. MILTON, J. P. *A Case of Chylothorax, with a Record Quantity of Fluid Withdrawn from the Left Pleural Cavity, and Ultimate Recovery.*
7. LANDOLT, E. *Discussion on the Form and Manipulation of Instruments Used in Ophthalmic Surgery.*
8. SNELL, S. *An Inquiry into the Causes of Blindness in Three Hundred and Thirty-three Inmates of the Sheffield School for the Blind.*
9. FISH, H. M. *A Study of Optic Neuritis in Connection with Nasal Accessory Sinus Disease.*
10. GROSSMANN, K. *An Improved Form of Artificial Eye.*
11. GROSSMANN, K. *A Portable Refractometer and a Portable Astigmometer.*
12. CROSS, F. R. *Discussion on Iridocyclitis.*
13. HINSHELWOOD. J. *Four Cases of Congenital Word-Blindness Occurring in the Same Family.*
14. HERBERT, H. *Clinical Observations on Spring Catarrh.*
15. SMITH, E. E. *Fatal Case of Orbital Thrombosis.*
16. COULTER, R. J. *On the Treatment of Alternating Squint.*
17. SPICER, W. T. H. *Vesicular Affections of the Cornea.*
18. DE SILVA, W. H. *Lepra Ophthalmica in Ceylon.*
19. HENDERSON, T. *Pathogenesis of Glaucoma and the Rationale of Its Treatment.*
20. ROPER, A. C. *Prolapse of the Iris in Simple Cataract Extraction.*

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, No. 38.

SEPT. 19, 1907.

1. *NEISSER, A. *Atoxyl in Syphilis and Frambesia.*
2. *BERGELL, P., AND STICKER, A. *Pathogenesis and Specific Destruction of Cancer.*
3. SIMONS, A. *Theory and Practice of "Threshold" Percussion.*
4. *FRANKE, F. *Treatment of Injuries of the Heart.*
5. KRÖNIG, B. *Early Exercise in Obstetrics and Gynecology.*
6. v. HERFF, O. *Massage and Vibration in Gynecology.*
7. BAUER, A. *Chorionepithelioma after Vesicular Mole and after Abortion.*
8. HARTMANN, A. *Sodium Perborate in the Treatment of Ear, Nose and Throat Affections.*
9. JACOBJ, C. *To Economize the Use of Curare in Experiments on Frogs.*

1. Neisser in a short communication states that apes inoculated with syphilis do not develop the disease if they are treated with atoxyl. Large single doses are most effectual, and combination with trypan-red is better than atoxyl alone. Frambesia is also influenced by the drug, which makes a strong argument in favor of an etiological and clinical connection between the two diseases.

2. Bergell and Sticker mention the results that have already been obtained in cases of experimental new growths by injecting substances extracted from normal livers. In this way it has been possible to produce necrosis and liquefaction of carcinomas and sarcomas, and the theory has been suggested that the unrestrained growth of malignant neoplasms is due to absence or insufficient quantity of similar ferment-like bodies. So far, however, it has not been possible to produce the local effect without giving rise to toxic symptoms. In experiments on mice it was found impossible to cause complete disintegration of the tumor without endangering the life of the animal through toxic action of the organ extracts. In advanced experimental sarcomas in dogs, the authors had a similar experience. The injection of specific liver ferments caused regressive changes in the growth leading to its complete disappearance after it had reached a stage of development that excluded the possibility of spontaneous cure. The authors warn against a too sanguine attitude in regard to the application of the method to similar conditions in man, though they consider that the results obtained are of great theoretical value.

4. Franke remarks that 120 causes of heart injuries are on record in which operative treatment was attempted, with successful outcome in 46%. Fischer has collected 729 cases in which no operation was done, less than 16% surviving. After describing some personal experiences and discussing published reports, he agrees in the conclusion that the great danger in heart injuries is not from the injury itself, but from pressure on the organ by fluid accumulated in the pericardium. The first step must be to remove this pressure by puncture and aspiration, whether operation is contemplated or not. In most cases puncture will make the operation unnecessary. The general practitioner should aspirate when symptoms develop, without waiting for the surgeon. He quotes a Russian surgeon who has reported seven bullet wounds of the heart in Manchuria, in which complete recovery occurred under expectant treatment. Operations on the heart, even if successful, leave a predisposition to organic affections later, and the author therefore prefers early puncture of the pericardium. He punctures usually in the fifth interspace 2 or 3 cm. from the sternum, proceeding slowly and slanting the needle towards the median line. [L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 38.

SEPT. 17, 1907.

1. *PÄSSLER, H., AND SEIDEL, H. *Pathology and Treatment of Emphysema of the Lungs.*
2. SCHADE, H. *Diabetes and Katalysis.*
3. *BACMEISTER. *Bacteriology of Cholelithiasis.*
4. PROESCHER AND WHITE, C. *The Presence of Spirochetes in the Hyperplastic Lymph Glands of Pseudoleukemia.*
5. RIEBOLD, G. *The Ovulation Period and Its Relation to Menstruation and Disease.* (Continued article.)
6. ENDERLEN. *Iodin-Benzin Disinfection.*
7. EBNER, A. *A Simplified Bandage for Use after Breast and Axillary Operations.*
8. ANSCHÜTZ, W. *The Chances of Probable Cure in Cancer of Stomach and Intestines.*
9. VOIGT, L. *What is Generalized Vaccinia?*
10. HAMMERSFAHR, A. *A Case of Double Traumatic Chylothorax.*
11. AXMANN, H. *Vasodilatation caused by Radium Treatment.*
12. BESCHORNER, H. *The Placing of Stations for the Care of Tuberculosis. Their Importance in Combating Tuberculosis as a Disease of the People.* (Continued article.)
13. BECKER. *A New Sterilization Apparatus for Salt Solution.*
14. HENSCHEN, K. *Fractures of the Transverse Processes of the Vertebræ by Muscular Action.*
15. FUCHS, F. *The Opening of the International Laboratory on Monte Rosa.*

1. Pässler and Seidel believe with Freund that the etiology of many cases of emphysema is to be found in a contraction and hardening of the cartilages of the ribs, with abolition of the movements of the thorax and resulting increase in its size, especially in the lower portions. The angle of Ludovic is much broadened. There is also a degeneration of the diaphragm. Freund has recommended in such cases the excision of parts of the rib cartilages, in this way bringing about a return of the respiratory movements of the thorax. The authors have tried this procedure in two cases, with improvement of symptoms in both. In such cases of emphysema the authors believe Freund's operation is of great value. The operation is indicated where there is dyspnea after slight exertion.

3. Bacmeister examined gallstones from twenty cases and found all but four sterile. In two of these cases the gallstones were of considerable standing, as evidenced by size and consistence of the stones and condition of the gall bladder. The stones contained typhoid bacilli, and there was a history of a comparatively recent typhoid infection. Working along these lines the author was able to cultivate typhoid bacilli from the center of fragments of sterile stones, which had been immersed in typhoid bouillon cultures. He concludes that it is possible for bacteria to pass into certain gallstones from the bile (especially cholesterin stones) or from the stones outward. [R. D.]

Berliner Klinische Wochenschrift. No. 38. Sept. 23, 1907.

1. Babes and Vasilie. *Atoxyl Treatment of Pelagra.*
2. *Bashford, E. T., Murray, J. A., and Haaland, M. *Transplantation of Cancer in Mice.*
3. Fermi, C., and Repetto, R. *The Pathogenesis of Trachoma.*
4. Kentzler, J. *Further Researches on Albumins.*
5. Morgenroth, J., and Reicher, K. *Researches on the Anemia Caused by Toxolecithids.*
6. Moreschi, C. *The Value of the "Diversion of the Complement" Method in Bacterial Diagnosis.*
7. *Spät, W. *A Case of Influenza Pyemia.*
8. *Weigert, R. *The Influence of Food on Tuberculosis.*
9. *Westenhoeffer. *The Practical Importance of Pharyngeal Affections in Cerebrospinal Meningitis.*
10. Wolff-Eisner, A. *Typhoid Toxin, Typhoid Antitoxin and Typhoid Endotoxin.*

2. The authors describe a series of experiments in transplantation of epithelial tumors in mice. Successful transplantation was obtained in 201 individuals. An interesting observation was that the animals in which spontaneous resorption of the transplanted tumor occurred seemed to receive a specific immunity against this form of tumor, as no further attempt at transplantation was successful.

7. Spät holds that under certain conditions the influenza bacillus may have marked septic and pyogenic qualities. He reports a case of a young man who had bronchopneumonia and pleuritis followed by a general infection, ulcerative endocarditis and pyonephrosis, all due to the influenza bacillus.

8. Weigert claims that clinical and physiological observations and experiments show that there is a direct connection between the water content of the organism and its power of resistance against infection. The greater the fluid content, the less is the resisting power of the tissues. In animals fed on carbohydrates the fluid content is at its maximum. It is a demonstrable fact that different forms of food affect the composition of the organism. The author, working on these lines, fed five pigs on fat and five others on carbohydrates. The animals were then infected with tuberculosis, and it was found that the fat-fed pigs reacted in a much lesser degree to the infection than those fed on carbohydrates. Weigert suggests that, taking these results into consideration, the diet in human tuberculosis should be largely fat and should contain little carbohydrate food.

9. In an earlier work Westenhœffer showed that in the majority of cases of epidemic cerebrospinal meningitis, the nasopharynx, especially the pharyngeal tonsil, is the first focus of infection. According to observations carried out during the last epidemic in Germany, the schools are not places from which infection is spread, as the children do not spit out the infected sputum, but swallow it. In cases of pharyngeal infection, the spitting out of infected material would be of much importance in spreading the disease. The determination of a pharyngeal affection due to the diplococcus of Weichselbaum is important for the recognition of carriers of infection in the detection of the spread of the disease, and in the systematic prophylaxis against it. [R. D.]

Archiv für Klinische Chirurgie. Band 82, Heft 2.

1. Cohn, S. *Clinical Studies on The Processus Vaginalis of the Peritoneum; with Especial Reference to the Cause of Interparietal Inguinal Hernia.*
2. Haim, E. *Appendicitis as Caused by the Streptococcus.*
3. Elenevsky, K. *The Pathological Anatomy of the Multilocular Echinococcus in Man.*
4. *Rostowzew, M. I. *Aseptic Intestinal Suture.*
5. *Klauber, O. *Fistula between Gall Bladder and Bronchus, with Recovery after Laparotomy.*
6. *Neugebauer, F. *The Diagnosis and Treatment of Hirschsprung's Disease.*
7. Bloch, A. *Amputation of the Thigh by the Method of Gritti.*
8. Bibergeil, E. *The Treatment of Uncomplicated Fractures of the Malleoli.*
9. *Rokitzky, W. *Plastic Operations on the Esophagus.*
10. Stubenrauch. *Regeneration of the Gall Bladder After Partial Cholecystectomy.*
11. Schlesinger, A. *The Anatomy of Coxa Vara in Children.*

4. Rostowzew, by the use of an enterotribe and the Paquelin cautery, has devised a method of intestinal suture, both end-to-end and lateral, by which he is able to make the anastomosis in an absolutely aseptic manner. He claims that the method is simple and that the operation time is shortened over that employed in other methods. Full illustrations are given in the text.

5. Klauber reports a case of a woman of thirty-six years who had had repeated severe attacks of gallstone colic for six months. At the end of this time there occurred fetid, purulent expectoration, which was soon followed by the expectoration of bile and pus. At operation the gall bladder was found enlarged and contained an encapsulated stone. The communication between the thoracic cavity and the biliary system could not definitely be made out, because of the poor condition of the patient. Its general situation, however, was the posterior surface of the liver and diaphragm. After drainage of the gall bladder, convalescence was uncomplicated, there being no further expectoration of bile.

6. In the diagnosis of Hirschsprung's disease, Neugebauer uses a rectal sound and the x-ray. In each of the two instances which he reports, the x-ray picture showed the shadow of the sound somewhat to the left of the navel going upward toward the right, even as far as the fourth rib, and then bending toward the left. The first case reported was that of a nine-months-old child in which the autopsy confirmed the diagnosis of dilatation of the colon. The second instance was in a boy of twelve, who was completely cured by a large-sized lateral anastomosis between the beginning of the transverse colon and the lower end of the sigmoid. In this second case, in spite of the fact that the bowels moved voluntarily after operation, an examination a year later showed that the sigmoid was still abnormally enlarged, and that the high positions of the diaphragm and liver were still present. For these reasons Neugebauer considers the disease to be congenital, at least in its inception. In neither of his two cases was he able to demonstrate any valvular closure of the gut.

9. Following a gastrostomy, through which the patient was fed, Rokitzky made a plastic operation on the esophagus for stricture, by turning in a flap of skin from the front of the neck, after excision of the cicatricial portion of the esophagus. This flap was sutured over a tube. Four months later the esophagoscope showed perfect union, with some dilatation at the point of suture. The final result was most excellent; all forms of food could be swallowed and the dilatation only made itself evident as a scarcely visible swelling which appeared at the site of operation during swallowing. [W. C. Q.]

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 16, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	7	2
Chicago	—	—	Waltham	1	0
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	7	—
Baltimore	209	45	Brookline	4	1
Cleveland	—	—	North Adams	10	—
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton	8	5
Cincinnati	—	—	Medford	1	—
Milwaukee	—	—	Beverly	1	1
Washington	—	—	Leominster	2	1
Providence	68	16	Hyde Park	4	1
Boston	185	53	Melrose	3	0
Worcester	44	11	Newburyport	—	—
Fall River	44	19	Woburn	6	—
Cambridge	25	2	Marlboro	1	0
Lowell	30	4	Westfield	6	1
Lynn	21	3	Peabody	—	—
New Bedford	26	9	Revere	3	1
Springfield	17	3	Attleboro	3	2
Lawrence	17	7	Clinton	2	1
Somerville	20	5	Adams	2	2
Holyoke	23	9	Gardner	1	—
Brockton	10	0	Milford	1	—
Malden	8	1	Watertown	2	1
Chelsea	7	2	Plymouth	—	—
Salem	14	3	Weymouth	4	1
Newton	8	4	Framingham	3	—
Haverhill	6	2	Southbridge	3	2
Fitchburg	9	5	Wakefield	—	—
Everett	8	2	Webster	—	—
Taunton	16	0			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED NOV. 20, 1907.

BAILHACHE, P. H., surgeon. Granted leave of absence for 7 days from Nov. 20, 1907, under paragraph 189, Service regulations.

CARRINGTON, P. M., surgeon. Granted leave of absence for 6 days from Nov. 16, 1907, under paragraph 189, Service regulations.

CARRINGTON, P. M., surgeon. Granted 2 days' extension leave of absence from Nov. 22, 1907. Nov. 20, 1907.

MCINTOSH, W. P., surgeon. Granted leave of absence for 10 days from Nov. 27, 1907. Nov. 14, 1907.

VON EZDORF, R. H., passed assistant surgeon. Detailed as a delegate to the Third International Sanitary Convention, to be held in the City of Mexico, Dec. 2–7, 1907; upon completion of which duty to rejoin his station at New Orleans Quarantine. Nov. 13, 1907.

ANDERSON, J. F., passed assistant surgeon. Detailed to represent the Service at the meeting of the American Association for the Advancement of Science, to be held in Chicago, Ill., Dec. 29, 1907; upon completion of which to rejoin his station at Washington, D. C. Nov. 13, 1907.

ANDERSON, J. F., passed assistant surgeon. Granted leave of absence for 7 days from Nov. 14, 1907, under paragraph 191, Service regulations.

ANDERSON, J. F., passed assistant surgeon. Granted 6 days' extension leave of absence from Nov. 21, 1907. Nov. 16, 1907.

HOLT, J. M., passed assistant surgeon. Leave of absence granted Passed Assistant-Surgeon Holt for 23 days from Sept. 7, 1907, revoked. Nov. 14, 1907.

BOGGESS, J. S., passed assistant surgeon. Relieved from duty at Quebec, Canada, and directed to proceed to St. John, N. B., for duty. Nov. 16, 1907.

SPRATT, R. D., assistant surgeon. Granted leave of absence for 1 month from Dec. 12, 1907. Nov. 20, 1907.

BRYAN, W. M., assistant surgeon. Directed to proceed to Savannah Quarantine Station for temporary duty: upon completion of which to rejoin his station at New Orleans, La. Nov. 18, 1907.

GILL, S. G., acting assistant surgeon. Granted leave of absence for 30 days from Dec. 4, 1907. Nov. 15, 1907.

GREGORY, G. A., acting assistant surgeon. Granted leave of absence for 14 days from Nov. 14, 1907. Nov. 16, 1907.

STEARNS, H. H., acting assistant surgeon. Granted leave of absence for 2 days from Nov. 10, 1907, on account of sickness. Nov. 18, 1907.

LAGRANGE, J. V., pharmacist. Granted leave of absence for 7 days from Nov. 14, 1907, under paragraph 210, Service regulations.

HEPLER, G. K., pharmacist. Relieved from duty at Chicago, Ill., and directed to proceed to Louisville, Ky., reporting to the medical officer in command for duty and assignment to quarters. Nov. 16, 1907.

RESIGNATION.

PHARMACIST L. P. HALL resigned to take effect Nov. 2, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Boston, Mass., Nov. 20, 1907, for the purpose of conducting a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon R. M. Woodward, chairman; and Assistant Surgeon T. W. Salmon, recorder. Nov. 18, 1907.

SOCIETY NOTICES.

BOSTON MEDICAL LIBRARY. — The Boston Medical Library is open five evenings in every week until 10 P. M. from Nov. 1 to June 1, being closed only Saturday and Sunday evenings. There seems to be a certain amount of misapprehension on this point and the notice on the Library front door is not seen by all the members.

W. L. BURRAGE, M.D.,
Chairman, House Committee.

THE HOSPITAL CONFERENCE OF THE CITY OF NEW YORK. — A special meeting of the Hospital Conference will be held at St. Luke's Hospital, Cathedral Heights, on Friday evening, Nov. 29, 1907, at 8.30 o'clock, to consider the adoption of recommendations to be submitted by the Committee on Ambulance Service, relating to the ambulance service of Greater New York. The Committee on Ambulance Service will ask that its recommendations, or such other recommendations as may be adopted, be laid before the Mayor's Hospital Commission.

GEORGE F. CLOVER, *President.* S. S. GOLDWATER, *Secretary.*

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. — The annual meeting will be held at the St. Charles Hotel, New Orleans, La., the 17th, 18th and 19th of December, 1907.

DENEGRE MARTIN, M.D.,
Chairman, Committee of Arrangements.

A PROPOSED NEW ENGLAND PEDIATRIC SOCIETY. — The Visiting Staff of the Boston Floating Hospital request all those interested in the formation of a New England Pediatric Society to meet at the Boston Medical Library, 8, The Fenway, Saturday, Jan. 4, 1908, at 8.15 P. M. It is hoped that this movement will excite general interest and that the attendance at the meeting will not be limited to those working along this special line.

JOHN LOVETT MORSE, *Chairman.*
WILLIAM E. FAY,
ARTHUR WILLARD FAIRBANKS,
CHARLES W. TOWNSEND,
HENRY I. BOWDITCH, *Secretary.*

RECENT DEATHS.

DR. AARON DAVIDOW, of New York, who was graduated at Chicago in 1894, died on Nov. 18.

DR. WILLIAM NATHAN BELCHER, a prominent physician of Brooklyn, N. Y., died on Nov. 20. He was born in Brooklyn in 1862, and was graduated from the Long Island College Hospital in 1884. Among the positions that he held were those of attending physician to the Long Island College Hospital, the Polhemus Memorial Clinic and the Methodist Episcopal (Seney) Hospital, and pathologist to St. Christopher's Hospital, Brooklyn.

BOOKS AND PAMPHLETS RECEIVED.

Modern Clinical Medicine. Diseases of the Nervous System. Edited by Archibald Church, M.D. An authorized translation from "Die Deutsche Klinik," under the general editorial supervision of Julius L. Salinger, M.D. Illustrated. New York and London: D. Appleton & Co. 1908.

Metabolism and Practical Medicine. By Carl von Noorden. Vol. III. Chicago: W. T. Keener & Co. 1907.

Syphilis in the Army. By Major H. C. French. London: John Bale, Sons & Danielsson, Ltd. 1907.

Transactions of the American Surgical Association. Vol. XXV. Philadelphia. 1907.

Surgical Applied Anatomy. By Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D., F.R.C.S. Fifth edition, revised by Arthur Keith, M.D., F.R.C.S. Illustrated. Philadelphia: Lea Brothers & Co. 1907.

DEC 9 1907
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Original Articles.

THE TECHNIC TO BE OBSERVED IN THE EXAMINATION AND LOCAL TREATMENT OF THE UPPER RECTUM AND PELVIC COLON.

BY T. CHITTENDEN HILL, M.D.,
Surgeon to the Rectal Department of the Boston Dispensary, Boston.

At the present time there exists in the profession a general manifestation of interest and realization of the important bearing that certain local lesions and structural changes, brought about by catarrhal and inflammatory conditions of the rectum and sigmoid, may have as etiological factors in the causation of chronic constipation, chronic diarrhea, so-called mucous colitis, ulcerative colitis, reflex symptoms of both the male and female genito-urinary organs, as well as various aches and pains of the rectal, sacral and lumbar regions.

The reason for this aroused interest in old subjects may be attributed to the rather recent discovery that the upper rectum and pelvic colon can be thoroughly explored and many localized inflammatory processes treated, and even operative procedures carried out through the electrically lighted sigmoidoscope.

A number of original workers, both in this country and abroad, have during the past four or five years thrown much light on some of these obscure disorders, at the same time suggesting more rational methods of treatment.

While recognizing the fact that it may properly be said that the whole subject is in a sense in an evolutionary stage of development, yet the first principles and primary general truths have been studied, their importance recognized and established beyond a question of doubt.

Thus our knowledge of these conditions which have necessarily been founded chiefly on the symptoms which they produce, and a physical examination, such as abdominal palpation or at most the examination of the feces are, at the present time, supplemented and simplified by direct instrumental examination of the bowel.

The result has been that our views have been considerably altered as to the pathology of the diseases just mentioned, and altogether different methods of treatment have suggested themselves.

The sigmoidoscope has been to the writer a very necessary adjunct in his efforts to accurately diagnose and treat some of the more difficult of these cases. Inasmuch as even recent graduates of our best medical schools receive but little instruction in this important domain of surgery, a description of the technic employed and certain practical suggestions may be of interest to some who have not had the opportunity for studying the diseases of the lower portion of the bowel. The qualified graduate of to-day has prepared for the practice of medicine by attending special clinics where he has been afforded an opportunity to gain a general knowledge of nearly every department of medicine and surgery, with the notable exception of diseases common to the rectum and sigmoid.

Such being the case it is scarcely to be wondered at that many otherwise skillful practitioners imagine great difficulties to surround the correct diagnosis of these cases, and more often than otherwise the treatment undertaken is entirely of a perfunctory and haphazard nature.

The remarks that follow are not intended to convey the impression that every patient applying for treatment for constipation, diarrhea or mucous colitis should at once be put to the inconvenience of a sigmoidoscopic examination.

Nevertheless, I am convinced that a systematic examination of some of the more obstinate of these cases, not benefited by intelligent medical treatment, would disclose definite lesions, or at least inflammatory conditions of the mucous membrane of the rectum or sigmoid which must be corrected before any other treatment will be of much avail.

PREPARATION OF THE PATIENT FOR EXAMINATION.

Inasmuch as rectal examinations are distasteful to many, and for the further reason that many patients are imbued with the impression that instrumental examinations of this region of the body are particularly painful, I shall give much attention to details, the description of which it is hoped will not prove tiresome.

With the patient properly prepared there is nothing about a rectal examination that is any more disagreeable than an exploration of any of the cavities of the body, and when dexterously conducted it should not cause any more discomfort. Save in exceptional instances any table, such as is procurable in the ordinary household, will serve for a satisfactory examination. The elbows and knees for male patients, and the right lateral semi-prone for women are the easiest positions in which to conduct the preliminary examination.

In the first position the whole peri-anal region is readily accessible without the aid of an assistant, while in the latter the patient, if an assistant is not at hand, can facilitate the examination by supporting the left buttock.

The sweat and sebaceous glands in the immediate vicinity of the anus are numerous and large, and for this reason the anal orifice should be cleansed by thoroughly wiping with absorbent cotton, which has been wrung dry of some antiseptic solution. After carefully inspecting and palpating all about the anus, the index finger with soap under the nail (if gloves are not used) is smeared with a stiff lubricant, and gently inserted with a rotary motion into the rectum. It is unnecessary to soil the finger with fecal material as its presence should be noted before actual contact takes place. When the rectum is found to contain feces, a small enema of boric acid solution, not exceeding ten ounces, will quickly empty the rectum and likewise the sigmoid in many instances, in such a manner as to permit of instrumental examination. The small enema will almost invariably answer for exploration of the rectum itself, but in atonic conditions of the large intestine it will be found necessary

to ask the patient to call later and be prepared as follows: on the morning preceding the day set for examination, 3 to 6 dr. of magnesium sulphate or a suitable dose of some saline mineral water should be taken.

Three hours before coming to the office, the bowel is further cleansed with a large enema of normal saline solution taken in the knee-chest posture, followed two hours later by the injection of half a pint of clear water containing an ounce of glycerin. This last enema should never exceed the amount stipulated, for if larger some may remain in the sigmoid and cause much annoyance by being discharged during the examination or treatment.

TECHNIC OF PASSING THE TUBE.

It is difficult to formulate definite rules as to the technic of exploring the sigmoid. It is easier and much more satisfactory to demonstrate to the beginner the principles involved than to describe it, and then with a little practice any one who has had previous experience in the use of similar instruments, can accustom one's self to passing the tube in a manner that will be entirely safe and satisfactory to both patient and surgeon.

It is readily apparent to all, that the greatest care and caution should be exercised in passing the sigmoidoscope, especially when there is an active ulcerative condition of the bowel, or other inflammatory condition of the neighboring organs. A case[1] has recently been reported by G. Sultan in which perforation of the rectum near the recto-sigmoidal juncture took place during a sigmoido-scopic examination. The patient, a woman aged fifty-three, was suffering from chronic catarrh of the large intestine. The instrument was readily passed for 20 cm. At this point distention with air was begun. During the distention the patient complained suddenly of great distress, and at the same moment Sultan could see in the sigmoidoscope the serous membrane right before him bulging into the rectum. He describes in much detail the repair of the injury. Immediate laparotomy — suturing the rent and the finding of a particle of fecal matter the size of a cherry in the lower true pelvis. The patient died seven weeks later, and in the depth of the abdomen was found an encapsulated abscess.

Notwithstanding this unfortunate experience he concludes his paper with the statement "that in the rectoscope we have a distinct aid which is not possible in any other manner or method in forming a decision concerning changes in the rectum or sigmoid. We must, however, always bear in mind how dangerous this instrument can be of which we make use."

There are reported instances in which rough handling and undue force in passing the tube has been followed by perforation of the bowel, and the instrument has passed on into the peritoneal cavity.

Such methods, however, are absolutely unjustifiable, and if the rule is followed to use no force after the end of the sigmoidoscope has passed the anal sphincters no such serious complications can possibly arise.

Before introducing the tube the patient should be made as comfortable as possible in the genu-pectoral position.

If for some reason this posture is impossible because of an anchylosed or amputated lower extremity or great discomfort of assuming this position, the lateral semi-prone with the knees well drawn up on the abdomen may be substituted.

In fact, this latter position is favored by some proctologists for asthetic reasons, claiming that it is much pleasanter for women and hypersensitive individuals, but the writer believes that the greater ease with which the instrument is passed and so much less discomfort is occasioned the patient that the genu-pectoral position should nearly always be the one of preference.

The passage of any instrument into the rectum is rendered less difficult by first inserting the finger past the sphincters. This procedure dilates and lubricates the anal canal, as well as affords the surgeon opportunity to ascertain the exact direction in which the instrument should be guided before the obturator is withdrawn.

The sigmoidoscope, warm and smeared with vaseline, should be pressed firmly over the anal orifice, the patient at the same time being requested to strain down, thus relaxing the sphincters. Steady firm pressure, in a downward and forward direction, should be made on the handle of the instrument until it has passed the anal canal. After this portion has been passed, the handle should first be gradually lowered and pushed forward until the end of the instrument has reached the middle portion of the sacrum. At this point the obturator should be withdrawn, which will allow the bowel to become distended with air so that the tube can be passed onward by sight. The instrument is then gradually raised, allowing it to be gently pushed onward to the promontory of the sacrum, where considerable resistance to the onward progress of the instrument is met with. A great deal of difficulty is experienced by the beginner in passing the instrument into the sigmoid, because of a well developed fold of mucous membrane, known as O'Beirne's sphincter, situated at the junction of the sigmoid and rectum. This valve-like sphincter frequently makes the rectum appear to end abruptly in a blind pocket. If careful search now be made, the valve will be located in close apposition to the opposite wall of the gut. It can then be effaced with the end of the instrument so as not to retard its further progress into the sigmoid flexure. From now on the directions usually given are to make slight pressure on the hand bulb of the pneumatic sigmoidoscope which will sufficiently inflate the gut so that it may be inserted to its full extent, and the whole interior of this portion of the intestine brought plainly into view. During the past year I have practically discarded the hand bulb as I have found that by placing the patient in a good proctoscopic position it is rarely required. Its use is

[1] Deut. Zeitschr. für Chir., p. 397.

often very distressing and in ulcerative conditions it must be regarded as a dangerous practice. In some cases an invagination, acute flexure, sacculation, or narrowing of the caliber of the gut will not be straightened out by air insufflation. Air will pass through such places causing considerable distention without one's being aware of it, unless the patient complains of abdominal pain. It is in such cases as these when there is ulceration above that the greatest danger lies.

If the onward progress of the instrument is impeded it is better to slightly withdraw the instrument, get the direction of the gut and reinsert the obturator which will allow the tube to be passed with less inconvenience to the patient. This maneuver can be repeated until the tube has been passed as far as desired.

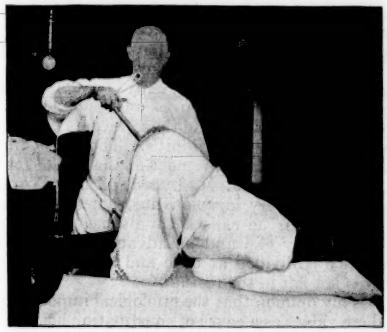


Fig. 1. Relative direction of the tube when passing the sphincters.

The photographs here reproduced are intended to give in a general way the relative direction of the tube: when passing the sphincters (Fig. 1),

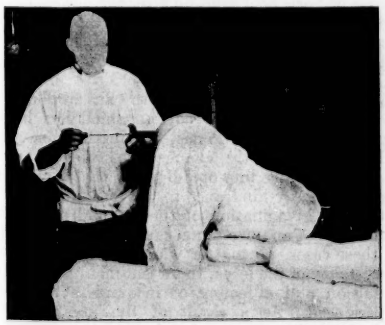


Fig. 2. The end of the tube has reached the middle portion of the sacrum. The obturator should be withdrawn at this point.

when it has reached the middle portion of the sacrum (Fig. 2), its passage over the promontory of the sacrum (Fig. 3), and when inside the pelvic colon (Fig. 4). The great majority of sigmoidoscopic examinations are conducted without the use of general anesthesia. Occasionally, however, it is desirable when there are painful affections about the anus, or the patient is apprehensive of being hurt. It should always be borne in mind when employing ether that there is much more danger of injury to the intestine as we do not have the patient's sensations to warn us when making too much pressure or distention.



Fig. 3. Passing the tube over the promontory of the sacrum.

We have, therefore, in the sigmoidoscope an instrument of precision which should be resorted to in the treatment of many conditions which are dependent on catarrhal inflammations of the rectum or pelvic colon, such as hypertrophic and atrophic catarrh, traumatic, tubercular and

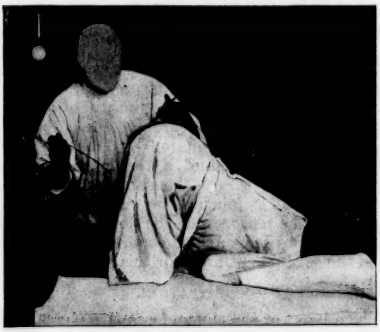


Fig. 4. The tube inside the pelvic colon.

specific ulceration, etc. With the lesions brought plainly into view and easy of reach, direct topical applications to the diseased tissues may be made which will prove more effective than the more commonly employed medicated enemas and suppositories.

CHRONIC DIARRHEA.

Cases of chronic diarrhea that have resisted careful medical treatment are often caused by circumscribed ulcerated areas of the rectum or

sigmoid which are readily accessible through the sigmoidoscope.

Through the courtesy of different members of the Medical Staff of the Boston Dispensary, I have had an opportunity of examining and treating many such cases, and frequently lesions have been discovered that yielded very promptly to local treatment.

The plan of treatment carried out was briefly as follows: The restriction of the diet to non-irritating foods such as milk, soft boiled eggs, gruels, boiled rice, nourishing soups, etc., as well as the avoidance of cold, acid or alcoholic beverages, greasy and highly seasoned foods and excesses of tea or coffee.

The local treatment mainly relied upon was high colonic flushings with boric acid or normal salt solution, together with the topical use of nitrate of silver, from one to two drams to the ounce, to all abrasions or ulcerations present. In some cases instead of the silver solution, ichthyol in glycerin 15%, or balsam of Peru in castor oil 15%, seemed to act with better results. Those cases in which there are reasons to believe that pathological lesions exist above the pelvic colon may be treated by medicated emulsions of olive oil through a long colon tube.

The thorough flushing of the colon is very soothing and healing to an inflamed and ulcerated mucosa, and when supplemented with the above and topical applications, much can be done to check the copious and frequent diarrheal discharges. A diarrhea dependent upon a localized or general enteritis of course would not be benefited by local treatment, but many of these cases are well of the disease of the small intestine, yet there remains the ulcerated or inflamed condition of the colon or rectum.

Cases of ulcerative colo-proctitis, especially if of a syphilitic or dysenteric nature, which prove obstinate to treatment per rectum will often yield readily to colon flushing through the appendix. The operation was originated by Dr. Robert F. Weir, of New York, and if the appendix is of sufficient caliber serves the same purpose as a cecostomy and is much more agreeable to the patient for the reason that the former operation does not allow the escape of feces as often happens when the cecum is utilized for this purpose.

CONSTIPATION.

The advent of the sigmoidoscope gave a fresh impetus to the study of constipation, as it was very interesting to note in what particulars the rectum and sigmoid of a patient who habitually carried about a load of fecal material in these organs, varied from the normal. The subject of constipation is a large one involving the chemistry of digestion, dietetics, etc., as well as mechanical obstructions and inflammatory conditions of the abdominal organs. Leaving all these general and complex questions, I will mention briefly the treatment of certain conditions that are frequently met with in the terminal portion of the digestive tract.

In all cases, the usual routine of regular time of going to stool, the correction of errors of diet, eating plenty of fruit and drinking an abundance of water, out-of-door exercise, gymnastics, etc., when possible should be insisted upon. Abdominal massage and kneading of the colon is often a valuable adjunct to other treatment.

The valves of Houston congenitally enlarged or hypertrophied and stiffened, as a result of catarrhal inflammation, may be the cause of constipation. Dr. T. C. Martin, of Washington, was the first to recognize this fact and recommend the operation of valvotomy for its relief.

Dr. Martin's operation consisted in incising through the proctoscope the valve or valves and suturing the free border, which operation he still advocates. The procedure, however, except in skilled hands, may be attended with hemorrhage or fatal puncture of the bowel. Various automatic valve clips have been made which serve the same purpose by dividing the valves by pressure necrosis, and when these are used there is no danger of hemorrhage or perforation. Should the peritoneum by any possibility be included in the valve it causes adhesions to form between the two layers and thus prevents perforation and subsequent peritonitis. The clips come away with the fecal movement at the end of four or five days. Dr. J. M. Lynch, of New York, has devised a very ingenious instrument for this purpose, which he calls a thyrotome. It is an electro-cautery clip and its advantages are that the valve is divided at once and thus a foreign body is not left in the rectum.

It is my opinion that the etiological importance of these valves as a cause of constipation has been somewhat overestimated, but occasional cases will be met with where the valves form an obstruction which can be dealt with in no other way. I believe it is always better to try a palliative course of treatment before division. Emptying of the rectum of any retained feces by an 8-oz. enema of boric acid solution after the bowels have moved in the morning will improve the catarrhal condition which is always present in these overloaded recti. Two or three times a week the valves should be massaged for five minutes through the proctoscope with an applicator protected by absorbent cotton which has been dipped in olive oil. Persistence in this massage will very frequently change a stiffened and obstructing valve into one so pliant that it cannot possibly be any hindrance to the fecal current.

Chronic invagination of the sigmoid or upper rectum is not an uncommon cause of constipation. In these cases, no matter what the character or consistency of the feces, there is difficulty in their expulsion and a feeling of incomplete relief is experienced. As a result of the invagination superficial ulceration of the sigmoidal and rectal mucosa is soon produced, and this may be manifested by the discharge of mucus sometimes streaked with blood and pus. By careful digital examination one may feel the invaginating sigmoid, and through the proctoscope it may be seen as the patient strains down.

The treatment may be either palliative or opera-

tive. The palliative will sometimes prove successful, and consists in replacement by air dilatation with the pneumatic proctoscope with the patient in the knee-chest position. After such replacement of the gut the bowels will sometimes act regularly for a few days, and persistence in this line of treatment may effect a cure. At the same time ulcerations present are treated by direct topical applications. Should palliative measures prove of no avail the suturing of the sigmoid to the abdominal wall (sigmoidopexy) will prevent the invagination.

Stricture of the rectum should not be forgotten in this connection. I have seen several cases that had received prolonged medicinal treatment without the real cause being ascertained. In two cases the stricture was annular and situated just within the internal sphincter and barely admitted the examining finger.

Hypertrophy and spasm of the external sphincter muscle is a more common cause of constipation than is generally supposed. In these cases usually a small ulcer will be found somewhere in the anal canal, which is irritated by the fecal discharges and thus keeps up the spasm and rigidity of the muscle. The treatment for this condition is the same as that for anal fissure.

RECTAL CANCER.

Notwithstanding the accuracy with which rectal cancer can now be diagnosed, it is a fact, most surgeons will agree to, that an early diagnosis is made out in only a small percentage of the patients that present themselves for operation. Perhaps not more than one fifth of the cases are suitable for radical operation, yet these growths of the lower rectum can be easily recognized by digital examination alone, while those of the upper rectum and pelvic colon can nearly always be accurately located with the sigmoidoscope. Should there be doubt as to the nature of the neoplasm it can be differentiated from other tumors by removing a portion for microscopical examination.

In the early stages when the growth is small bi-manual palpation is unreliable. Exploratory incision is probably the surest method of making the diagnosis, but it is only infrequently that such an operation is necessary. Cancer of the large intestine will continue to be overlooked until we, as a profession, recognize how frequently it occurs (according to late statistics three quarters of the malignant growths of the intestinal tract are located in the rectum or sigmoid) and become more discerning as to the initial symptoms of this insidious disease. It can readily be perceived that the general practitioner will frequently overlook the first vague symptoms of malignant disease of the rectum.

It is a common experience to hear these patients remark that for six months or a year previously they had consulted their physician for certain unusual sensations in the rectum, such as a feeling of weight and fullness that was only relieved by defecation; or a patient who has heretofore been regular in his habits may have complained of a gradually increasing constipation, which is a very suggestive, early symptom of malignant disease of the rectum. Even after the cardinal symptoms, such as muco-purulent or bloody stools, constipation alternating with diarrhea, etc., appear, the diagnosis may have been obscured by complications such as piles, fistula or ulceration, for such patients often appear vigorous and robust for a long time, since the neoplasm is situated at the lower end of the digestive tract and thus has not interfered in any way with the digestion and assimilation of nourishment.

Many patients have been seen by the writer, illustrating how far advanced these cases often get, before they are discovered, and not until we, as physicians, make it a routine practice to examine every patient with however indefinite rectal symptoms, by means of the newer and more modern instruments at our disposal, will the mortality of rectal cancer be materially reduced.

SOME FURTHER STUDIES ON NOCTURNAL PARALYSIS.

BY ISADOR H. CORIAT, M.D.,
Second Assistant Physician for Diseases of the Nervous System, Boston City Hospital.

(From the Neurological Clinic of the Boston City Hospital.)

IN a recent contribution upon this subject,[1] I reported the case of a woman, in whom, following a distressing emotional shock, there developed a peculiar symptom-complex. In the half-waking and half-sleeping condition (hypnagogic state), there arose a state of general palsy, which, in its clinical picture, was an exact motor repetition of the original emotional episode. The disorder was interpreted as a functional dissociation and closely related to the temporary, general palsy that is sometimes observed in patients who are suddenly awakened from a deep hypnosis. Complete recovery took place by psychotherapeutic methods. Since reporting this case, four others of a similar nature have been observed. These have not only helped to clear the clinical aspects of the question, but have thrown considerable light on the origin and evolution of the attacks. Furthermore, a search through the literature has brought several similar contributions to light, which may be added to the papers by Weir Mitchell and Ch. Féré, already quoted.

Bleuler,[2] in a subjective analysis of his sensations while hypnotized, experienced a partial palsy on awakening from the state of autohypnosis. In a discussion of the variants of dream consciousness, Jastrow [3] seems to have had this condition of general nocturnal palsy in mind. He writes: "It may be pertinent to note that there seems occasionally a condition of dream stupor that may be induced in predisposed sleepers by sudden awakening, though it also occurs spontaneously. The subject thereof finds

[1] Isador H. Coriat: Nocturnal Paralysis, BOST. MED. AND SURG. JOUR., vol. clvii, no. 2, July 11, 1907.
[2] E. Bleuler: The Psychology of Hypnotism, Münch. Med. Woch., 1889, No. 5. (Quoted by Forel, Hypnotism and Psychotherapy.)
[3] Joseph Jastrow: The Subconscious, 1906, p. 231.

great difficulty in regaining consciousness, as also getting control of muscles and sense organs. He may 'reel and stagger, rub his eyes and make efforts to keep them open, apparently struggling against a relapse into deeper sleep; and somewhat dazed and befogged in his perceptions, his condition suggests the intoxication through the action of a drug. At times also he proves to be suggestible and able to perform routine actions in an automatic fashion. An energetic stimulus, such as a dash of water upon his face, may be needed to arouse his dormant faculties."

In a recent contribution, Gudden [4] applies the term "sleep drunkness" to the state of an individual, in whom the transition from the sleeping to the waking state is slow and there is a delay in the return of grasp of environment and of capacity for action. The individual is in a half-dream state and the real world is only hazily grasped. In his group I, called by him physiological "sleep drunkness," he speaks of the temporary inability to move or talk, although the mental grasp may be quite clear. Both Krafft-Ebing and Pfister apply the term to that half-waking and half-sleeping state in which the psychomotor activity is altered. The individual cannot speak, is rigid, numb, unable to move, although he appears to possess a complete consciousness. All these observations appear to correspond to the nocturnal palsy of our cases, except here that the consciousness seems rather hazy and bears a direct relation to the feeling of inability to move. As will be shown later, however, the phenomenon bears no relation to sudden awakening.

Furthermore our studies have shown that the symptom-complex is merely a portion of the clinical picture of a neurasthenic or psychasthenic neurosis, hysteria or a recurrent mental state. The following three cases are from the service of Dr. Thomas:

CASE I. PSYCHASTHENIA WITH PECULIAR CRISES AND NOCTURNAL PALSY.

The patient, H. O., age thirty-eight, first came to the Neurological Clinic on June 5, 1907. She was perfectly healthy up to the age of twenty-six, when, following an attack of typhoid fever, she became nervous and depressed for a time and had a fear of death. She recovered, however, and has remained well since, up to the onset of her present trouble. The patient came to the clinic complaining of ordinary neurasthenic symptoms, but on closer analysis the following symptom-complex was elicited. During the first week of May, 1907, her husband went to California in order to better his financial condition. She worried considerably over this and finally went into a state of great anxiety, more particularly because she had received no letters from her husband for three weeks. At this time also her son became ill and this in a measure added to the anxious mental condition. When the assuring letter finally did arrive, the anxiety failed to improve and she began to fear the journey to California and its consequent breaking up of her home in Boston. During the day she became quite irritable, started at slight sounds, sleep was poor, but without any specially distressing dreams; there developed a premonition of something terrible about to happen, that her husband was dead, that her child might die, etc. The feeling of anxiety was associated with numb sensations mounting from her feet to her head; there was occasional vertigo; an almost constant feeling of physical weakness, and there finally developed a frequent diarrhea. At the height of the episodes of anxiety and fear there supervened a peculiar mental state almost resembling a psycholeptic crisis. There was no sensation of a blow on the head, but "a blur comes before my eyes, things are getting dimmer," "things seem to be fading away," etc. These sensations, however, never reached an actual sense of unreality.

Parallel with these episodes of anxiety, there arose the nocturnal palsy. Three or four times during the night she would awaken from her sleep and in the half-waking and half-drowsy hypnagogic state would experience a sudden jerky sensation, followed by an inability to move the limbs. The total inability to move would last for three or four minutes, and there was a general sensation of numbness in the limbs. At first all her will power would not serve to move her body, but finally, after a few minutes of exercising her strongest will, she would be able to throw the limbs about, but even then with considerable difficulty on account of the subjective feeling of numbness. During the few minutes that this general palsy persisted the limbs feel paralyzed and "like withered," the heart palpitates, the eyes are wide open and there is a sense of intense fear and impending death. The attacks are worse in the early morning, about 5 A.M. During the attacks, she is always clearly oriented and there is no amnesia or haziness of memory for the individual attacks. This nocturnal palsy has always occurred in the half-waking and half-sleeping hypnagogic state, and as the patient became more fully awakened, the paralysis gradually grew less and she was able to move the limbs. At no time has the palsy persisted after the patient has become fully awake. These attacks have occurred every night up to the present. The physical examination was negative with the exception of a fine tremor of the tongue, lips and outstretched hands. Nothing special was elicited in abstraction.

Here we seem to be dealing with a psychasthenic neurosis associated with frequent diurnal crises of anxiety and nocturnal palsy. This latter can be best interpreted as an equivalent of the daily crises, both being due to an interference with the normal psychological tension and leading to a dissociation of consciousness. Janet in his voluminous treatise makes no mention of this particular disorder of sleep as an equivalent of the psychasthenic crises. The treatment in this case consisted of waking suggestions directed towards the cessation of the crises and the nocturnal palsy. The psychotherapeutic technic was identical with that employed in the case cited in my first paper. As a result, the patient completely recovered in the course of a few weeks and was able to journey and join her husband in California.

CASE II. NEURASTHENIA WITH RATHER PROTRACTED ATTACKS OF NOCTURNAL PALSY.

A. G., age twenty, came to the Neurological Clinic on Aug. 23, 1907, complaining of neurasthenic symptoms. She always enjoyed good health up to within two months. Since this time, however, she has been sleepless at night; during the day, she has been restless and fidgety, would drop objects, worried over trifles, and has noticed frequent precordial palpitation. There was no

[4] H. Gudden: Die physiologische und pathologische Schlaftrunkenheit. Archiv. für Psychiat., Bd. 40, H. 3, 1905.

sense of exhaustion and no headache. The physical examination was negative. During the period of her neurasthenic symptoms, she has been subject to attacks of nocturnal paralysis occurring two or three times a week. She will awaken during the night in a state of moderate fear and although she feels fully conscious, yet finds it impossible to move her limbs or body or even to cry out, for a period of fifteen minutes for each attack. She is certain that the individual attacks last fully fifteen minutes, because she is in the habit of hanging her watch at the head of the bed, the eyes are open in the attacks and she is thus able to time herself, although unable to move a muscle. Usually the hands are clasped at the back of the head and she is unable to pull them from under her. On the morning following an attack, there is a feeling of weakness in the arms and legs, but no tingling. These phenomena of nocturnal palsy, as in the previous case, always occurred in the half-waking and half-sleeping condition; the eyes were wide open, but try as she would, she was totally unable to move or to cry out. As there was a transition from this hypnagogic state to a complete waking condition, the general palsy gradually wore off, at first the arms could be pulled down and then she was able to move the limbs.

If the histological theory of sleep were substantiated by sound experiment, this case would offer a fascinating opportunity to conclude that the dendrites were still in a state of retraction. Psychotherapeutic procedures were used in this case; the attacks ceased during the first week of treatment, after which the patient failed to come to the clinic, so that the ultimate result is unknown.

CASE III. HYSTERIA WITH NARCOLEPTIC ATTACKS AND NOCTURNAL PALSY.

C. M., age forty-five, first presented herself to the Neurological Clinic on July 26, 1907. She never suffered from any serious illness, neither was there any history of narcoleptic attacks in the immediate family or its collateral branches. For eight years she has suffered from peculiar attacks consisting of an irresistible impulse to sleep. These would occur a number of times during the day, particularly when she sat down or was engaged in sewing or reading. At times she would be compelled to bite the tongue in order to keep awake. These narcoleptic attacks would last only a few minutes at a time and were usually preceded by slight vertigo. It was impossible to trace the origin of the attacks. They continued without interruption for six months, then ceased and did not return until the spring of 1907, when they again became of almost daily occurrence. Five years ago, there was an attack of aphonia lasting six weeks, and at present there is almost a constant sensation of a "globe" in the throat. On several occasions, particularly when excited, vision has been suddenly lost. At no time has there been any headache, vomiting or paralyses. About four years ago, she began to suffer from attacks of nocturnal paralysis. She would awaken from a sound sleep and while in the half-sleepy (hypnagogic) state, would find herself unable to open her eyes or move her limbs. This motor paralysis would last for a few minutes only, and as she became fully awake power would return. At no time was she able to come out of the individual attacks voluntarily while in the half-sleepy condition, but always could do so, as she became more fully awake. Sometimes she would be awakened by the crying of one of her children, but even under these circumstances would find herself unable to stir. The day following the attacks, she suffered from pain in the arms and fingers. These attacks of nocturnal paralysis occurred every night for about six months, then ceased, but have recently returned, but to a slighter degree. Nothing was obtained in experimental distraction, neither were there any physical stigmata of hysteria. As in the other cases the treatment was waking suggestion directed against the narcoleptic attacks and nocturnal palsy given three times a week, with the result that continued improvement took place during the first month, after which both types of attacks ceased altogether. The effect of psychotherapy in this case is of some interest. Not only did the nocturnal palsy completely cease, but in addition the patient recovered from the narcoleptic attacks. In Camp's recent case of narcolepsy,[5] suggestion brought about a cure, after the administration of caffeine had completely failed to keep the patient awake.

CASE IV. (Service of Dr. Prince).

NEURASTHENIA WITH NOCTURNAL PALSY.

G. G., age twenty-five, came to the clinic complaining of irritability, a sense of exhaustion, particularly after slight exertion, gaseous eructations and poor sleep. Some time ago she developed incipient tuberculosis and entered a sanitarium where she remained for eight months, and recently she has worried over her husband's condition, who has been unable to work on account of postero-lateral sclerosis. During the past two months and occurring several times a week, she would awaken from her sleep, feel dizzy and find that she was unable to move her arms or legs, which felt numb and paralyzed. During the period of palsy she is only half-awake, the eyes are closed, and she is unable to scream. As the drowsy condition wears off, the eyes can be fully opened and the limbs can be moved. Physical examination is negative. This patient has only recently come under observation and it is yet too early to judge of the outcome. During the short time she has been under treatment, however, the attacks of nocturnal palsy have entirely ceased. The treatment has been waking suggestion, applied in the same manner as in the other cases.

An analysis of the above cases will show some points of interest and importance. While the condition of nocturnal palsy occurs occasionally and as a transitory symptom in normal individuals, yet when the attacks are protracted and frequently repeated, it can safely be interpreted as a pathological phenomenon. In the first place it will be noted that the condition of generalized motor paralysis occurs only in the hypnagogic state, and as this wears off and progresses to complete awakening there is a parallel disappearance of the palsy. Consciousness in this hypnagogic condition is either a little hazy or is completely retained, as witness the case of the patient who was able to judge of the length of time she was unable to move by gazing at the watch which hung over her bed. (Case II.) Since the same general palsy has been observed in subjects who are gradually or suddenly awakened from a deep hypnosis, as was pointed out in my first paper, we may safely assume that hypnagogic state is a genuine hypnotic condition, but spontaneously instead of experimentally induced. In fact, in Case II, the gazing at the watch, parallel with the inability to move, reminds one strongly of a state

[5] Carl D. Camp: Morbid Sleepiness, with a report of a case of Narcolepsy. Jour. Abnor. Psychol., vol. ii, no. 1, April–May, 1907.

of hypnotic ecstasy, though no relation seems to exist between hypnosis and normal sleep, in spite of Bechterew's statement[6] that hypnosis is nothing but a modification of normal sleep. Yet it appears from a study of our cases that the spontaneous, semi-drowsy hypnagogic state is practically identical with the experimental hypnotic state. In both there is increased suggestibility, a tendency to paralysis, cataleptiform conditions may appear, and if the state is prolonged, as in the semi-drowsiness of patients suffering from protracted insomnia, hallucinations of sight may arise.

Sudden awakening from a sound sleep seems to bear no relation to the origin of the disorder. In some personal observations on sleeping animals that were suddenly awakened by a loud noise, no temporary muscular rigidity took place, for the animal would frequently jump up and regain its feet at once. If the animal were only half awakened by the stimulus, in a few seconds it would again pass into a natural sleep without any intervening palsy.

This nocturnal palsy, therefore, on clinical evidence at least, seems to possess the following characteristics:

1. It appears only in the hypnagogic state and runs parallel with it.

2. When it occurs in normal individuals it is a transitory and rare phenomenon.

3. Sometimes it follows a strong emotional shock and assumes the characteristics of a recurrent mental state, as in the case published in my first paper.

4. The symptom-complex may occur in hysteria, neurasthenia or psychasthenia. In neurasthenia it appears to be merely symptomatic of the underlying neurosis with its concomitant sense of exhaustion. In hysteria and psychasthenia it is an equivalent disorder in the sense of replacing the narcoleptic attacks in the former disease or the peculiar crises of anxiety in the latter.

5. This nocturnal palsy has a varying duration, from a few seconds in normal individuals, to several minutes or even a quarter of an hour, in pathological cases.

6. The entire symptom-complex is a mental dissociation reacting most strongly on the motor mechanism, and as a purely functional disorder, it is distinctly amenable to psychotherapeutic treatment.

EXOPHTHALMIC GOITER.*

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THIS is an old, and yet a new, disease. It is old inasmuch as its written medical history dates as far back as the year 1825, when Dr. Caleb H. Parry, an English physician, first described its symptoms, and he saw his first patient in 1786, more than one hundred and twenty years ago. Although his description was not nearly so complete and full as were those later given by Dr. Graves in 1835, and by Dr. Basedow in 1840, still Osler calls it Parry's disease, in preference to naming after either Graves or Basedow. Graves was a practitioner in Dublin, and the English call it Graves' disease, and because Basedow was a German the Germans call it Basedow's disease. But at the present time, if one looks up the current literature of the subject, he finds it most often referred to as exophthalmic goiter.

And still beyond the year 1825, when it first took its place in our medical literature, who can tell how far back its real history may run, and how its complex symptomatology perplexed and worried previous generations of medical men?

It has, in a way, become a new disease in the increased interest which it has excited since the advent of the various prepared powders and serums, in the past few years, which are giving more promise of control and cure of the affection than have all the previous forms of medication. Moreover, the surgeons are showing more knowledge and courage, together with more skill and caution in operating on the thyroid gland, than was the case ten or fifteen years ago.

Hence it is a subject of great interest to the men in general practice, for they are usually first consulted by the patient. It is of interest to the surgeon because more cures than ever before are being effected by operations, and some of our most skillful surgeons show a larger per cent of cures by the knife than has ever been possible by any other form of treatment. It is of interest to the neurologist because of the serious and complicated involvement of the nervous system, and of interest to the ophthalmologist because of the almost invariable eye complications.

Hence it is a timely and important subject for us all to consider and discuss.

Though exophthalmic goiter has been seen in childhood, and as young as two years of age, and has been known to first appear in persons beyond middle life, it is confined almost wholly to young adult life, and also to females from twenty to thirty years of age. The proportion of females to males is about five to one. We do not know any reason for this great preponderance of females over males, but it is believed that the uterine functions in some way render the vasomotor nerve centers less stable and more easily influenced by shock, fright, grief and worry than in the males. In many cases the exciting cause seems quite definitely traced to some great mental excitement like those given above. In others we cannot find any definite time or experience to trace it to. One author says young adult females with delicate constitutions, clear complexion, blue eyes, blond or reddish hair, and an irritable nervous temperament are especially liable to come to this form of nervous breakdown. More than this we are unable at present to give as a constitutional, predisposing cause. But we do know that the first blow falls on the vasomotor nerve centers. This in turn disturbs the vascular supply of certain organs and among others the thyroid gland. This gland has very definite and

[6] W. V. Bechterew. What is Hypnosis? Jour. Abnor. Psychol., vol., i. no. 1, 1906.

* Read before the Worcester District Medical Society, in Worcester, Oct. 9, 1907.

important functions to perform to keep us in perfect health.

Very recently a French writer has this to say on the function of this gland: "The thyroid gland presides over growth. It supports the physical heat in us at a point which is most convenient for our condition of existence. It regulates the assimilation and destruction of nutritive materials. It is indispensable to the muscular and cerebral functions, and is intimately connected with all transmission of nervous impulses. It is charged with the support of our protective membranes, epidermis and mucous and glandular epithelium. Furthermore, the first symptoms of thyroid insufficiency are of the trophic order, and they are characterized, in short, by an abnormal fragility, a too rapid desquamation of cellular tissues, which isolate us from our external environment." The function of the thyroid and its secretion must be within definite and certain limits, and not too much nor too little.

If too scant or absent we have all the degrees of myxedema in which we have the thick, heavy, dry skin, the feeble and slow pulse, heavy movements both of body and mind and an almost half vegetative existence. If this secretion is increased and absorbed by the lymphatics, for, you remember, the thyroid is one of those curious ductless glands, and is passed on into the blood, we have that group of symptoms which make up the clinical picture of exophthalmic goiter.

And what are these symptoms?

They are a constantly rapid action of the heart, an enlarged thyroid gland and exophthalmos. But these differ in seriousness and in prominence and in constancy of occurrence in different cases. In most cases the first of these to appear is the increase in the action of the heart, and later on the distress of palpitation. With this is a feeling of exhaustion and muscular fatigue and shortness of breath on even slight exertion. The patient may find herself taking long sighing respirations, even when not exerting herself. I have seen one case in which this was the first symptom noticed. At night she sleeps poorly, and dreams many and bad dreams, and awakes in the morning tired and exhausted. Headache is often a troublesome complaint. She is restless by day, and by night tosses about in bed. She can bear but few bed coverings at night and must have a cold room to sleep in, or have a feeling of being smothered. She will wear but light clothing by day, if she be up and about, because she has a feeling of great bodily heat, and she may actually have a degree or two of fever. Sweating is a prominent symptom in many cases, and in some a hacking cough is quite constant, caused by a feeble heart and a passive pulmonary congestion, very likely.

In a severe case rapid emaciation is a marked symptom, and with this an excited nervous state of mind, and her friends may have noticed that she is more easily vexed, excited and worried than has been her habit.

The stomach may be behaving badly and vomiting be troublesome, or only occasional. Tremor of the hands is an early symptom, and the patient may have noticed that she easily drops whatever she may be holding. The knees sometimes give way under her and she drops to the floor. And these, very likely, some or all of them, are all your patient confesses to you when first you see her. These, you see, are not very definite symptoms, and may not point to any well defined disease, and they are common to several.

If you take the pulse, while the patient is quiet and unexcited, it will be probably above 100 or 120 or more, and is a compressible pulse, showing a weak but rapid heart. If you listen to the heart you will find it rapidly and forcibly striking against the rather thin chest walls, for it is probably dilated and covers a large area. You may detect a blowing murmur both from this dilatation and the anemic condition of the blood, and this murmur may be transmitted up along the vessels of the neck. Your patient does not yet show the peculiar eye symptoms, neither is there a noticeable increase in the size of the neck, and the patient herself, nor her family, are aware of any enlargement here.

Of this incipient stage Dr. E. G. Janeway, of New York, has this to say:

"When well developed and presenting all the marked features characteristic of it, exophthalmic goiter could be at once recognized by any tyro, but the case is very different in the incipiency of the disease, or when some of the characteristics are obscure, and we may then give a wrong diagnosis and prognosis." The most frequent mistake he has seen is to regard these as cases of neurasthenia, malaria, lithemia and beginning phthisis. The nervous debility and fatigue and restlessness suggest neurasthenia. The sense of heat, and the sweating and headaches suggest malaria. The disturbance of the stomach and bowels, the fatigue, the action of the heart and other symptoms, suggest lithemia; and, lastly, the whole array of these symptoms, including the emaciation, the sweating, some temperature, and if there be a cough also, he has seen mistaken for commencing pulmonary tuberculosis, and he has seen patients with advanced exophthalmic goiter who were thought to have died from pulmonary tuberculosis when autopsy showed none existed.

These symptoms which we have considered may be present for some weeks or months before the enlargement of the thyroid gland is noticed by the patient or her family. Usually, however, if careful search is made the physician will discover some enlargement, and most frequently in the right lobe of the gland. It can be made more evident by having the head thrown well back. Then, usually, the last of these symptoms, following the rapid pulse, the enlarged thyroid, comes the exophthalmos. In Riedel's Clinic in Jena these several symptoms were found in this proportion: goiter, 100%; rapid heart action, 94%; palpitation, 94%; exophthalmos, 92%; mental disturbances, 68%; tremor, 66%; headache, 42%; sleeplessness, 40%; sweats, 36%; emaciation, 30%; von Graefe's sign, 30%; vomit-

ing and diarrhea, 28%; Stellwag's sign, 22%. In another German clinic the enlargement of the thyroid was absent in but 3 out of 58 cases.

Cases differ very markedly in their progress from the onset. Some have a mild course and the patients have never been seriously ill, and very likely keep about their work and daily life in comparative comfort. I saw such a case in my office not many weeks ago. She was past fifty years of age, and regarded herself in very good health. But she had the protruding eyes, with a line of sclerotic showing below the upper lids; she had the rapid heart, more than 100 to the minute, and she had the enlarged thyroid to a mild degree. She confessed to some palpitation on mild exertion. This had been her condition for many years, for she has been under my care for several years and has had this same appearance. It was a well-marked but mild type of Graves' disease. We see on the streets and in the stores young and middle-aged women with the eyes prominent and a white line showing above the iris; you may be able to see that the neck is enlarged, perhaps, more on the sides. If you could examine the pulse and heart in these cases, very likely you would find it rapid and rather weak. I saw in the electric car in Boston, not many weeks ago, a young lady with the characteristic eye symptoms, she was nervous and fidgety, and had a florid complexion. I had no doubt she would show the other objective, and confess to the subjective, signs of this affection, if carefully examined.

But, on the other hand, I have followed a case where the symptoms, from the first, indicated a very grave type, where the goiter was large, throbbing and vascular, the emaciation was rapid, the pulse never below 120, or if so but a very short duration; the headache, at times, was very severe; for a few days only was there a prominence of the eyes and never extreme; sweating was never present but a rather hot, dry skin, and at times, an erythematous blush along the inner sides of the arms. Von Graefe's sign was not seen in any stage of the disease. She subsequently came under the care of one of the leading surgeons of the country, who had seen and operated on a great number of these patients. She was examined by Dr. Kocher, of Berne, Switzerland, one of the authorities of the world in exophthalmic goiter. She was kept in bed for two weeks, carefully preparing, by all the methods of medication, to bring her into a fit condition for partial removal of the thyroid. But any form of medication was only palliative, and did not in any way reduce the size of the goiter, or materially reduce the rapid action of the heart. At the end of two weeks there was partial removal of the thyroid. She survived the operation but a few days, as all the symptoms were more extreme immediately following the operation. These surgeons of very large experience regard it as a very grave, if not malignant, form of exophthalmic goiter. But even in this case the exophthalmos was only of passing duration.

In contrast to this, let me refer to another case that I saw some years ago. The young lady had been going about our streets for a year or two in comparative good health. There was very decided exophthalmos all this time, but it became so extreme in the left eye that the lids could not be closed over the cornea. This exposure brought on inflammation and ulceration of the cornea and on to panophthalmitis and enucleation. This destructive process was well established when I first saw the case, and I could not then draw the upper lid down over the globe. This patient had a rapid and feeble heart and had had this condition from the time of some severe mental shock some years previous. There was a well marked goiter, but not very large, and more on the right side. The etherization and shock of the enucleation had no bad effects on her condition, and the other eye was markedly improved in appearance. Thus, in a very limited experience, one may see how these cases differ in seriousness and how varied are the symptoms. We may have all the clinical features present but in a mild and chronic form. We may have a very severe type of the affection and have practically no exophthalmos. We may have extreme exophthalmos, and all the other symptoms not at all severe.

Next in point of frequency in its appearance, after the rapid action of the heart, comes the enlargement of the thyroid gland. And this symptom was absent, as we have seen, in but 3 out of 58 cases. Or, taking Riedel's clinic, it was present in every case.

In simple goiter we have, of course, an enlarged thyroid gland, and this enlargement is due chiefly to the dilatation of the alveoli with colloid material and increase of connective tissue; a local tumor, but without definite constitutional symptoms. In exophthalmic goiter, on the contrary, the colloid material is lesser in amount, while the glandular element is increased in number and size and the epithelial lining of these alveoli is increased. Given this condition, with a greatly increased blood supply, and we soon have coming into the blood in great excess that peculiar thyroid secretion, the active principle of which is a globulin containing iodin, called thyroglobulin. It has gone beyond healthy and normal limits and has become a toxin. And just this is the modern interpretation and explanation of the symptoms of exophthalmic goiter. It is a toxemia, and the factory that is supplying this toxin, working night and day under high pressure, is the thyroid gland. What was designed to be our conservator, our health giver, has now become our executioner and is driving its victim to death.

If in the way of illustration, we let the heart and its nerve supply be compared to a stage-coach drawn by six or eight mettlesome and fiery horses, and on each horse is seated a postilion; from the bits and bridles on these horses go the reins up to the hands of the driver on the box of the coach. The mettlesome horses shall be represented by the muscles of the heart; the postilions by the intracardiac nerve ganglia; the reins by the pneumogastric nerves which go up to the driver's seat, in the floor of the fourth ventri-

cle. This whole outfit may and does behave beautifully and goes along peaceably in perfect health. It may go to wreck and ruin for two reasons. Let those little imps, the postilions, became stimulated and reckless by too much fire water, and ply their horses with whip and spur; or, by some mishap, let the driver on his seat lose control of the reins, and you know very well what will happen to that coach and its horses. There will be a runaway, which may not be checked until exhausted in death, or it may be again taken under control and rescued from a total wreck. This thyroglobulin is the fire water that these postilions are imbibing and it sets them on fire. They use their spurs and whips on the horses on which they are seated, the cardiac muscles. They are also receiving aid and encouragement from an outside source, the lower cervical and first dorsal sympathetic nerve ganglia in the neck, for they belong to the same family as do the cardiac ganglia, and will behave the same way under the stimulus of this fire water. Some of the older writers believed the seat of this trouble was in the floor of the fourth ventricle; that there was partial paresis of the nerve centers here; that the driver on the box, to continue our illustration, was lax in the control of the reins, and that the little fellows on the horses were taking advantage and control of the situation to put their horses into a stampede.

It was not till 1886 that Moebius first definitely connected this disease with disorder of the thyroid gland. He, at that time, believed it was a thyroid neurosis. Basedow believed it was a peculiar blood condition, a chronic state of anemia.

But modern laboratory investigations have gone beyond these mere beliefs, in a neurosis and blood dyscrasia, and have shown that this thyroglobulin is the toxin that is playing the mischief with these sympathetic nerve ganglia.

In a recent article Dr. MacCallum, pathologist at Johns Hopkins, gives a list of 58 patients with exophthalmic goiter. In 41 of these the symptoms were what he calls "typical," and in every one of these the changes in the character of the thyroid gland were also "typical." The veins were large and distended with blood, and were easily torn, the epithelial lining of the alveoli was increased; the colloid material usually, though not always, diseased.

He says: "From what has been said it is seen that with the appearance of definite symptoms of exophthalmic goiter there is always the same change in the thyroid." In the 17 remaining cases the symptoms were "indefinite," and in these the changes in the character of the thyroid were "indefinite" also.

After post-mortem examination of the cervical sympathetic ganglia, the parathyroids, the nerve centers in the medulla, he comes to this conclusion: "On the whole, therefore, the only lesions in this disease, which are palpable and constant, are those of the thyroid and of the lymphoid apparatus and of the thymus."

Some German and French investigators believe, also, that the parathyroid bodies have taken on extra activity and are adding their peculiar toxic secretion to the blood. These little satellites of the thyroid gland are usually four in number, two on each side, and are situated behind the gland and around the terminal branches of the inferior thyroid vessels. They are small, ovoid or lenticular bodies, and often resemble small masses of fat in consistency as well as in color. They had escaped notice, or at least their great importance had been overlooked, until the year 1880, when they were accurately described for the first time by Sandstrome. Then they were allowed to be forgotten again for fifteen years, but since 1895 they have received more careful study.

MacCallum examined these parathyroids post-mortem in 16 cases, and he found them practically normal in every case, and from this he says: "On the whole it seems improbable that the parathyroids have anything to do with the symptoms-complex of exophthalmic goiter, when we consider these very slight anatomic lesions with the advanced changes in the thyroid."

The third member of this group of symptoms, the exophthalmos, is of least importance, though it be the most evident, and it is usually last to appear. The eye is pushed forward by the enlarged veins and tissues of the orbit. As we have seen, it may be slight; it may be extreme; it may be transitory; it may be permanent.

In the latter case, and in milder forms of exophthalmic goiter where emaciation is not severe, a fat deposit in the orbit and increased connective tissue may account for its long continuance. Usually the sight of the eye is not impaired. The von Graefe sign which has been referred to, and which at one time was considered of great importance, is the failure of the upper lids to follow the eyeballs in looking down, as they do in health. The Stellwag sign is an apparent enlargement of palpebral opening. The treatment of exophthalmic goiter, both medical and surgical, has taken on renewed interest and careful study in the past few years. It is not within my province, nor is it my purpose, to attempt to go fully into this broad field, even if I had the time at my disposal. I wish only to refer to the general principles underlying both.

Rest in bed, if the case is in any way serious, is, and always has been, an important part of the treatment. The list of drugs that have been used is a long one. But it should be remembered that some cases will recover, or greatly improve, under quiet and rest, with very little medication.

The modern plan of treatment is to introduce into the blood something that will counteract or neutralize this toxic thyroglobulin. As myxedema has been cured by extracts of the thyroid gland, the conclusion was natural that if animals could be rendered myxedematous they would supply us with something that would cure exophthalmic goiter. So dogs, sheep, goats and other animals have had their thyroid glands removed. The milk of these sheep and goats has been used after careful laboratory preparation. It is given in powder form. One of these is a

white powder called Rodegen, and is a German preparation. I have seen it used with great benefit, and while it had no radical curative effect and did not reduce the size of the goiter, it certainly improved some of the more distressing symptoms.

Then there are the different serums prepared from the blood of myxedematous animals. I have never seen them used, but Dr. John Rogers, of New York, has made especial study along these lines. He has reported some good results, and hopes that still more improvement will follow. He has treated 41 cases in this way with 8 cured, 25 improved, 2 died and 6 no result given. In 28 cases, reported by others, there were 3 cured, 16 improved, and 9 unimproved. The conclusions reached by these observers are these: if the goiter is small and soft the chances of improvement or cure are good; if the thyroid is hard and large the case is doubtful. Rogers calls his serum preparation a specific cytotoxin.

The x-ray has been used on these goiters, and much improvement has been seen in reduction of their size and in the general symptoms.

Dr. Chas. Mayo frequently prepares his patients for operation by a course of four or six weeks of its use. He believes it causes destruction of the efferent lymphatics and so shuts up the channels of entrance of these toxins into the blood. Some other observers have this to say of the results of x-ray treatment: It has induced unmistakable benefit in all cases; the goiter was reduced in size and as it subsided the nervous symptoms vanished with it. The patients all increased in weight. In some no relapse in fifteen months. The soft vascular goiters are the most readily influenced, and the prognosis is better the more recent the goiter.

And, finally, What has been the record, and what may we hope for from the surgical treatment of exophthalmic goiter? It will always be a serious operation, but if medical treatment has failed, after a few months of its employment, to bring marked improvement in these patients, they should have the benefit of surgical treatment, seems to be the conclusion of our men of largest experience and observation. Some other conclusions they have arrived at are these: Do not wait too long before resorting to surgery, for these patients are losing strength and power of resistance from a weakened heart from the effects of this toxemia. For this reason, it is believed, by some operators, there is more than ordinary risk in general anesthesia, and some patients have died from its effects even when no operation has been performed. The increased congestion of the head and neck also adds to the hemorrhage, for it is considerable at best, and the coats of the blood vessels are thin and tender and are increased in number. Some advocate the use only of local anesthesia, by eucaine, for this reason, and also that they can more surely avoid injury to the recurrent laryngeal nerve, if the patients are conscious. Mayo uses general anesthesia, and he has a brilliant record of recoveries.

The several operations that have been performed are: the removal of the lower cervical and upper dorsal sympathetic nerve ganglia; the ligature of the thyroid vessels, and partial removal of the gland. They all have some cases placed to their credit and have their advocates. I will consider, and that only briefly, the partial extirpation of the gland.

Friedmann says: "Enucleation or resection of part of the gland is the only means known to date by which exophthalmic goiter is permanently cured, and with internal treatment the mortality is 12%, and that permanent cure seems to be out of the question." "All goiters," says Kocher, "when there is a noticeable increase in size, should be removed, and especially when even in slight degree symptoms of exophthalmic goiter are present, as operation is the best means of preventing further development of this serious disease." He advocates the removal of three fourths of the gland. Halsted, of Johns Hopkins, advocates this operation, but he is very careful and solicitous about not only removal, but of injury in any degree, or even disturbance of the circulation of these parathyroids, for he, with others, has learned that injury to these is the cause of post-operative tetany, a very serious condition. He is careful to leave a liberal portion of the gland that surrounds the inferior thyroid vessels and these adjacent bodies. Complete removal of these little bodies, experimenters have found, in the lower animals, is followed by an acute fatal tetany, which supervenes in a few hours or a few days.

In all the operations on the thyroid, the gland should be handled as little as possible and then with the utmost gentleness, as any rough handling or squeezing forces this toxic secretion out of the gland into the circulation, and just this extra amount may turn the tide and hope of recovery against the patient. Those who have seen Dr. Charles Mayo operate on these patients say he is very delicate and gentle in handling the gland, and they attribute no small degree of his success to this caution. In estimating the relative success and cures from thyroidectomy it should be remembered that the surgeon is usually called upon to operate after medication has failed and an operation is the last resort; that the goiter may be large and vascular, and from such the hemorrhage would be serious; and that the heart and vital forces are possibly weakened by too long delay. One authority says that these only are the patients who are liable to die from the operation. It would seem that the future of this operation is most encouraging when we are told by Friedmann that the report from four large German clinics shows 109 patients operated on, and only 8 deaths, with 75 permanent cures, 23 much improved and 3 unaccounted for. He, himself, gives one record of 20 operations with 15 cured and 5 much improved. In another report I find there were 50 patients operated upon with 36 cured, 6 much improved, 1 no improvement and 7 succumbed to heart failure in twenty-four hours.

The use of eucaine locally has brought the

mortality down from 12% to 8%. Mayo in one list of 42 operations had only 1 death.

Including those given above and others I find on record we have a total of 360 operations on the thyroid gland for exophthalmic goiter, and only 28 deaths, or 13 recoveries to 1 death.

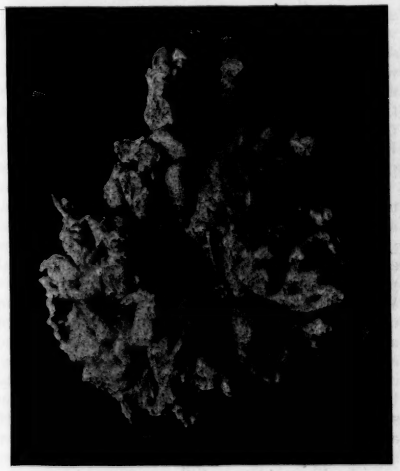
Clinical Department.

A CASE OF NON-ULCERATIVE FOLLICULAR ILEOCOLITIS.

BY FRANK E. STETSON, M.D., AND OSCAR S. CREELEY, M.D., NEW BEDFORD, MASS.

Serero Lynch, born in the United States, aged eight months, was admitted to St. Luke's Hospital, Aug. 17, 1907. Diagnosis: Ileocolitis follicularis non-ulcerativa (primary), intestinal absorption (secondary). Result. Died Aug. 18, 1907.

Urine color. — Normal to slightly cloudy. Reaction acid. Specific gravity (?) Albumin, small trace. Sugar, 0. Sediment, few pus and red blood cells, many fatty casts, few small broken-down round cells with fat drops within the cell.



Blood. — White count (one half hour after death), 53,000. Differential count: Lymphocytes, 75%. Polymorphonuclear, 25%.

Father and mother living and well. Never sick before.

Thursday, Aug. 15, 1907, baby quite fretful and pale. Bowels were slightly loose at this time. Character of the stools not noted.

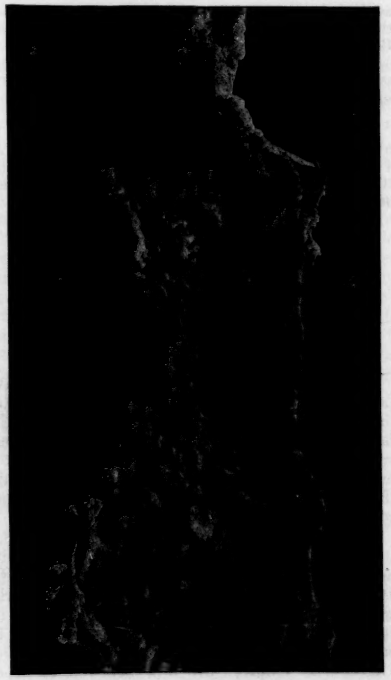
Friday, baby about the same and played as usual. Was taking his food all right at this time.

Saturday morning, Aug. 17, 1907, between 3 and 4 o'clock, baby vomited his milk after having had bottle. Vomited again at 4.30 A.M. Then went to sleep. On way to hospital appeared to feel better. Admitted at 6 A.M., Saturday, Aug. 17, 1907.

Physical examination, Saturday, 9 A.M., Aug. 17, 1907. — Robust-looking child of eight months, slightly pale. Did not look or act very sick, but was put to bed. Eyes, pupils equal. Neck, no retractions or glandular enlargement. Tongue, clear. Lungs, normal. Heart, sounds clear, no murmurs, regular, rate 126. Abdomen, slight distention but no rigidity or tenderness over any area; very slight rosary was made out but no other evidence of rickets. No eruptions or scars seen on child's body. Extremities, normal. Temperature, respiration and pulse (see chart).

AUTOPSY FINDINGS.

Incision was made in the usual manner from sternal notch to pubes. The intestines were markedly distended with gas but empty. The bladder was opened but showed nothing abnormal. Stomach and intestines next removed. Stomach appeared perfectly normal except for several little eroded places; these were mostly split pea in size and were colorless, and had no redness about the periphery; seven or eight of these were seen.



The intestines appeared normal except that in the last two feet of the ilium, non-ulcerating follicles were noted. These were grayish white in color and varied in size from pin head to split pea in size. These lesions were most abundant just before the ileo-cecal valve was reached. The mesenteric lymph glands were markedly enlarged. Some of the glands were as large as a large pea. The kidneys were removed and saved for further examination. Unfortunately, the specimen was destroyed. The kidney macroscopically was markedly injected throughout the pelvis.

The lungs were perfectly normal. The thymus gland, which in this case covered practically the

anterior aspect of the heart, was removed and appeared normal. The heart was opened and showed nothing abnormal. All four chambers were carefully examined. The spleen and liver, together wth the gall bladder, appeared perfectly normal.

The child did not appear ill on admission and played with its toys more or less throughout the day. It had 2 dr. of castor oil which caused it to have several loose movements. These movements were not, as far as I know, characteristic of any conditions. They were greenish in character, but showed no evidences of curds, blood or mucus, and were in no sense characteristic.

The child had an apparently comfortable night Saturday and took its barley water well. Sunday morning at 9.30 while going through the ward I noticed that the child was breathing with a good deal of difficulty, and watching it for a few minutes saw that the breathing was of a Cheyne-Stokes character. This persisted to the end. As the abdomen was not tender or rigid and as the baby appeared very sick at this time I examined the ears thinking perhaps it might have a middle ear. Both drums appeared perfectly normal.

Treatment. — Castor oil, 2 dr. Brandy, 10 drops every hour for four doses. Bowel irrigated with warm saline solution.

Diet. — Barley water.

Temperature. — On admission, 104.4°. At 12 o'clock noon, 101°. At 4 o'clock P.M., 100°. At 4 A.M., next morning, 103°. At one hour before death, 105°. Pulse at these corresponding times varied between 104 and 72.

Medical Progress.

PROGRESS IN GYNECOLOGY.

BY W. L. BURRAGE, M.D.

GONOCOCCUS INFECTION.

L. EMMET HOLT and other recent writers have pointed out that gonococcus infection is a better name than gonorrhea, time honored though the latter be, because it does not carry with it necessarily the stigma of a venereal disease. This is especially important in vulvo-vaginitis in children where there is no suspicion of a direct venereal origin of the infection.

Prevalence. — The prevalence of gonococcus infection in women varies within wide limits according to the views of different gynecologists. It is by no means uncommon in little girls, especially in institutions. This subject will be taken up in some detail further on. Suffice it to say here that most of the cases of purulent vulvo-vaginitis in children are now believed to be of gonococcus origin. Lomer found the diplococcus in 60% of the gynecological patients of Schroeder's clinic. Saenger and Schwartz [1] put the percentage of gonorrhea among all their patients, hospital and private, as low as twelve. Taylor, viewing the matter from the standpoint of the venereal specialist, says that 12% is a conservative estimate of the gonorrheal origin of all uterine diseases.

This great diversity of opinion can be accounted for in several ways. First, the difficulty of finding the scattered gonococci in the chronic cases. In the acute cases and under favorable circumstances, the gonococci are often not very numerous, only four to a dozen being found in one microscopical field. Second, we know that under certain conditions the cocci die, whether from lack of suitable nutrient material, the activity of the phagocytes or other cause. Although dead, the tissues in which this occurs are still infected, perhaps because of the "gonotoxin" generated in the dead cells. Third, the class of patients treated. One would expect to find gonorrhea most common among prostitutes. Statistics prove this to be the case. Among 533 prostitutes, sick and well, examined in the regular routine by Huber [2] 59.6% had gonorrhea. Prowe [3] found gonorrhea in 76.9% of 407 sick prostitutes in San Salvadore, Central America. Zweifel thought the number of women in his private practice who were ill because of the gonococcus was from 10% to 11%. Some writers place the percentage among private patients as high as 20. Obviously, information on this point is difficult to get for few statistics are published, physicians not caring to go on record.

Tissues affected. — The organs in woman usually affected by the gonococcus are, the vulva, urethra, vagina, uterine canal, and Fallopian tubes. Destructive inflammation of the tubes and ovaries with peritonitis is common. Gonococcus inflammation of the rectum and gonococcus infection of the bladder with secondary ascending inflammation of the ureters and kidneys are not rare. Huber [4] found rectal gonorrhea in 24.6% of 318 prostitutes who had gonorrhea.

That the disease is a serious one and rebellious to treatment there can be no doubt. The Committee of Seven of the American Medical Association, in a recent report to the association, asserted that 80% of the deaths from female pelvic disease are due to gonococcus infection. We have to consider not only the manifestations of the disease in the genito-urinary organs but also its effect on distant organs, such as gonococcus arthritis, especially of the knee-joint, and its effect upon the system, anemia and debility. F. R. Sturgis [5] draws a parallel between the constitutional effects of syphilis and gonorrhea. He considers that many of the same organs are attacked by both diseases and that gonorrhea may be likened to syphilis in the seriousness of the systemic disturbances it causes, not the least of these being impoverishment of the blood state and rheumatism with attendant gonococcus endocarditis. Out of an ample experience as clinical professor of venereal diseases in the University of the City of New York he deprecates the silly belief of those who consider gonorrhea as no more important than a cold in the head.

Characteristics of the gonococcus. — The gonococcus has an especial affinity for the mucous membranes of man. It is not, as formerly thought, limited in its place of growth to the columnar epithelium. It has been found in the

[1] Centralbl. für Gynäk., 1896, p. 1073.

[2] Wien. med. Wochenschr., 1898 p. 24.

[3] Centralbl. für Gynäk., 1901, p. 82.

[4] Refer. to in Zentralbl. für Gynäk., 1899, p. 1508.

[5] Amer. Jour. Urol., N. Y., 1904–5, i, 349.

sub-mucous tissues of the vagina by Mandl; in squamous epithelium by Bumm, Touton and others; in the thrombosed blood vessels of the bladder, in the serosa of the peritoneum, and in the substance of the ovary by E. Wertheim; in the connective tissue of the Fallopian tubes by Kraus; in the rectal mucous membrane by Fritsch; in the uterine muscle by Madlener and Menge; in the decidua and placenta of a nine-months pregnancy by Maslovski, and in the urine of cystitis by Melchoir. Kroenig [6] found gonococci in the lochia of over 10% of 296 lying-in women who had had childbed fever.

Lobenstine and Harrar [7] found that the average birth-weight of the babies of gonorrheal mothers is less than that of babies of normal mothers. Their deductions were based on the observation of 50 babies of gonorrheal mothers without fever, 50 babies of gonorrheal mothers with high temperature and 150 of normal mothers. Not only is the average weight less but there is a greater permanent loss, those of gonorrheal parentage gaining at the end of ten days only 10.9%, while babies of normal mothers gain 49.3%. They consider that gonorrhea occurring in the mother in the later months of pregnancy is the cause of a large number of premature births.

In places other than the genital organs and their neighborhood it has been found in the pus of inflamed joints by Stern and Jacquet, in the pus of an inflamed tendon sheath by Kroenig and in the mucous membranes of the oral cavity, nose, middle ear, and the conjunctiva of the new born by Dóhrn, Rosinski, Leyden, Kroenig and others. The gonococcus has been isolated from a thrombus of the pulmonary valve in a case of ulcerative endocarditis by Lenhartz, and in the blood current by Amann, Unger, Von Leyden and Michaelis. Amann proved the identity of the gonococcus by stain and culture, and, by experimental inoculation of the human urethra, produced a typical attack of gonorrhea complicated by inflammation of tendon sheaths.

The gonococcus may be cultivated outside the body by using as a culture medium human serum in the form of hydrocele, ovarian or ascitic fluid together with agar, and may be kept alive for several generations. It is to be noted that it grows only in neutral or alkaline media. Therefore the normal vaginal secretion made acid by the lactic acid bacterium of Doederlein is hostile to its growth.

Gonotoxin. — De Christmas [8] found that there is a toxic product of the gonococcus developed after the cultured organism is dead, and that this is capable of producing suppuration when injected into the eye of a rabbit. His work was confirmatory of the investigations of Wassermann [9] and Maslovski [10] who experimented with pure cultures of the gonococcus in nutrient media to which, after the cocci had attained their full growth, alcohol was added to destroy them and to precipitate the albumin. The dead cocci with the albumin were then filtered out of the fluid, mixed with sterile water, the alcohol driven off by heat, and the fluid so obtained used to inoculate rabbits and guinea pigs. The injections were found to be exceedingly poisonous and produced both local inflammations and pyrexia typical of gonorrhea. The filtrate when injected into the animals had no effect, showing that the poisonous properties were in the dead cocci. Maslovski considered that when the gonococci die a gonotoxin is developed in the body of the cocci, an endotoxin. It is to this toxin that the symptoms of gonorrhea are due rather than to the development of the gonococci in the organism. He found the toxin to have both a local action, inflammatory and suppurative, and a general action, elevation of temperature, loss of weight, etc. Repeated injections of the gonotoxin produced no immunity, neither did injections of the pure cultures; therefore there is no immunity in gonorrhea, and reinfection may take place in the same individual an indefinite number of times. This coincides with the clinical observations of the disease in man. According to the most recent and approved views mixed infection is not often present in gonorrhea. In other words the gonococcus generally has the field to himself. By the destruction of the surface epithelium as a result of gonococcus inflammation the conditions are made favorable for the invasion into the tissues of the staphylococcus, streptococcus and colon bacillus, which are found frequently after the gonococcus inflammation may be said to be at an end. It is likely that some, at least, of the manifestations of the later stages of gonococcus infection are due to the formation of the gonotoxin and not to the invasion of other organisms. Taking advantage of the discovery of the gonotoxin some attempts have been made to treat gonococcus infection by the injection of antigonococcus serum [11] but so far the results are not convincing.

Curability of gonococcus infection. — Julien [12] discusses the curability of gonorrhea, adopting Wertheim's view that in chronic gonorrhea a fresh attack may be lighted up by a new culture ground; there is no real immunity. That is to say, if a man having chronic gleet marries a healthy woman she acquires gonorrhea from him and then her gonococci are able to set up an acute process in the husband's urethra. This is the opinion commonly held to-day, and is founded more on clinical observation than on bacteriological evidence. The importance of a man being cured entirely of gonorrhea before he is married is made doubly apparent. Most authorities maintain that the disease may be eradicated by persistent treatment conducted over a long period of time. Every individual who has once had gonorrhea should be assumed to be infected still until the contrary has been proved.

Clinical course and symptoms. — Acute gonorrhea as seen in prostitutes is characterized by a chill, rapid pulse, elevation of temperature, pelvic

[6] Ref. to, by F. Staehler, Monatschr. für Geburtsh. und Gynäk., Bd. xvii, 77.
[7] Bull. Lying-in Hosp., N. Y., Dec., 1906.
[8] Ann. de l'Institut Pasteur, 1900.
[9] Berl. klin. Wochenschr., 1897, 32, 685.
[10] Ann. de Gyn. et d'Obstet., 1899, 483.
[11] Torrey, J. C.: Jour. Am. Med. Asso., 1906, vol. xliv, p. 261, also, Rogers, John, *Ibid.*, p. 263.
[12] Rev. Internat. de Méd. et de Chir., Paris, 1905, xvi.

pains, burning and smarting on urination, and, in the course of a few hours, by a leucorrhea, at first mucous, soon becoming purulent, the pus often being of a greenish hue and mixed with blood. The symptoms begin from twenty-four hours to eight days after infection. Exceptionally they may begin before twenty-four hours or may be delayed as long as fourteen days. The disease begins most frequently in the urethra, just as in the male. The meatus urinarius is protected in the young woman, as pointed out by H. A. Kelly,[13] by the labia urethræ. In the beginning of coitus the glans penis pushes against the labia and separates or invaginates them, bringing discharge from the male meatus directly in contact with the mucous membrane of the female meatus. The glands of Skene lie just in the edge of the female urethra; they are lined with columnar epithelium, the favorite habitat of the gonococcus. Therefore it happens that these glands are frequently infected. Another favorite seat of infection is the glands of Bartholin on either side of the entrance of the vagina just outside the hymen. These also are lined with a layer of columnar epithelial cells. The impact of the penis in its endeavor to enter the vagina causes more or less trauma of the tissues over these glands and gonococci-laden discharge from the male meatus is rubbed into them. The vagina, lined with pavement epithelium and bathed in an acid secretion, is infected, although less commonly than the urethra. The younger the patient the more apt is the vaginal mucosa to be infected, because in the young the pavement epithelium is softer and more like columnar epithelium, hence the frequency of gonococcus vulvo-vaginitis in children.

The mucous membrane lining the cavity of the cervix uteri is thrown into folds and has branching glands lined with ciliated columnar epithelium. This is the situation next most commonly affected. Here the disease is prone to lurk just as in the glands of Skene and Bartholin. An acute gonococcus infection generally involves the urethra, vagina and cervical canal. It runs a course of six weeks. The inguinal lymphatic glands which receive infective material from the vulva and lower vagina may become inflamed and may suppurate, and the patient has a "bubo." This complication is more common in women of uncleanly habits. A gonococcus arthritis occurring during the course of the disease is a frequent complication.

Acute gonorrhea as described, except among prostitutes, is relatively rare. The symptoms of the invasion of the gonococcus in the genital organs of women are generally not pronounced. They are often a smarting on urination and an increase of vaginal discharge. The only history of infection may be that a mucoid, unirritating leucorrheal discharge became purulent and irritating. Even this may be absent. Perhaps the first symptoms to lead a patient to consult a physician will be due to tubal disease, a cervical catarrh or a vulvo-vaginal abscess, so insidious are the stages of invasion of this disease. In the chronic forms of gonococcus infection the leucorrhea loses its purulent character and is generally abundant. The symptoms depend on the organs chiefly involved, whether vulvo-vaginal glands, urethra and Skene's glands, uterine canal or Fallopian tubes and peritoneum.

Vulvo-vaginitis in little girls. — Fluor albus in children was first mentioned in the eighteenth century, and although it has been referred to in treatises on the diseases of women and children its serious import has not received sufficient attention. Sara Welt-Kakels[14] observed in her clinic at the Mount Sinai Hospital, New York, during the ten years from 1893 to 1903, 190 cases of vulvo-vaginitis, or 1.6% of all the children treated. The largest number occurred in children between the ages of two and five years and the disease was rare after the tenth year. Not all of the cases were of gonococcus origin. L. Emmet Holt[15] reports the results of investigations made in the Babies Hospital and other institutions for children in New York. When the new building of the Babies Hospital was opened in 1902 a child with gonococcus vaginitis was admitted inadvertently. From this child, in spite of new wards and the cleanest of surroundings, 11 fresh cases developed, including 3 of gonococcus arthritis. The rule was thereupon established to admit no female child without a microscopical examination of the vaginal secretion. In another infants' hospital in the same city where there was said to be no vulvo-vaginitis, smears were made from the vaginal secretion of 100 infants and young children, the cases being taken in order without selection. Twelve showed a yellow purulent discharge, and pus and gonococci were found in all by microscopical examination. This must be considered a large percentage, as most authors place the frequency of vulvo-vaginitis as about 1%. Not all cases of vulvo-vaginitis are of gonococcus origin, the cause of the so-called catarrhal cases being unknown. The gonococcus form comprises nearly all those in which the discharge is purulent; it is the most severe and most rebellious to treatment besides being the most common. Although the inflammatory symptoms disappear at the end of four to six weeks, exacerbations occur. One author reports finding gonococci in the discharges after the disease had lasted four years. Gonococcus vulvo-vaginitis is contracted sometimes through sleeping with the mother, sister or other female relative; as a rule the infection is indirect and accidental, being transmitted on contaminated bed linen, towels, sponges or even by bathing in the same bath tub. A marked instance of the last mode of contagion was an epidemic of vulvo-vaginitis which occurred in the city of Posen, Germany, in 1890[16] in which 236 school girls, aged from six to fourteen years, were taken ill inside of eight to fourteen days with vulvo-vaginitis. They had all used the same public bath house, where, on account of limited accommodations,

[13] Twentieth Century Practice of Medicine, vol. i, p. 665.

[14] N. Y. Med. Jour., 1904, lxxx, p. 689.
[15] N. Y. Med. Jour., 1905, vol. lxxxi, p. 521.
[16] Referred to by Welt-Kakels, *loc. cit.*

two or more children were required to bathe in one tub.

There are grounds for the belief that adhesions of the labia and prepuce, occlusion of the hymen and hematocolpus, deformed uteri, and diseased Fallopian tubes are the sequelæ of this disease. The complications are acute purulent peritonitis, arthritis and ophthalmia. Latent gonorrhea has been referred to. It explains why the gonococcus, even after years of apparent cure, may regain its full virulence. This brings up the question of the advisability of marriage in persons who have had gonorrhea.

Gonorrhea and marriage. — In the case of the male it is the custom for genito-urinary specialists to advise that marriage is permissible when there are no shreds in the urine, when the gleety discharge from the urethra has ceased, and when repeated examinations made several days apart show no gonococci in smears made from mucous from the meatus. There are cases on record where these precautions have been observed and yet a gonorrheal process has been set up in the previously healthy wife. Other instances are numerous where no disease was noted in the wife until the husband became reinfected by intercourse with a prostitute. It would seem as if reinfection was at the root of the trouble, and would explain many of the otherwise inexplicable cases of gonococcus infection. In the case of woman repeated examinations of mucous from the meatus urethræ, after expression of the urethra; of mucus from Bartholin's glands, and mucus from the canal of the cervix uteri; found to be free from gonococci, prove that the disease is cured. It is to be remembered that clinical evidence shows that the disease is more easily transmissible by a previously infected woman at or about the time of menstruation. This fact is explained by the congestion of the genital organs always present at this time with the consequent liberation from the tissues of more abundant flora of gonococci. Something may be due to a diminished acidity of the vaginal secretion at this time, ordinarily destructive to the gonococcus. Therefore, examinations for the gonococcus should be made, if possible, near a menstrual period.

Instances will occur to the mind of every practitioner of large experience where a man who has had gonorrhea has had subsequently a family of healthy children. This must be considered the exception, the rule being that such a man's wife is sterile or has only one child, and she suffers in the future from uterine disease. Prostitutes are notoriously sterile. The sterility is supposed to be due to gonococcus endometritis, to destruction of the ciliated columnar epithelium of the Fallopian tubes by gonococcus inflammation, or to closure of their caliber from the same cause. Be this as it may, there can be no doubt, on clinical grounds, that gonococcus infection is one of the most frequent causes of sterility in women.

Diagnosis. — In the acute form of gonococcus infection the diagnosis is not difficult. It is established by a history of a suspicious intercourse followed in a day to a week by the classical symptoms and the finding of the gonococcus in the pus of the discharges. In the subacute and chronic forms the diagnosis is hard to make. It rests on a history of an unclean coitus; on the history of frequent and painful micturition (an acute urethritis being strong presumptive evidence of gonorrhea). It is not an uncommon experience to have the patient tell her physician that a little while after marriage she noticed that she had a leucorrhea which stained her linen and that her water smarted when she passed it. Questioning the husband at some subsequent time it is learned that he has had gonorrhea. Great tact should be exercised by the physician not to push his inquiries with the wife too far because of the danger of causing marital troubles that no doctor can cure. In gonococcus infection of the innocent, by far the most common variety of the disease, it is seldom advisable to inform the woman of the exact nature of the disease she has acquired. As a rule too great frankness on the part of the physician is to be deprecated. More is to be expected from missionary work with men who should appreciate the dangers they run and the risks to which they are subjecting those nearest and dearest to them.

Occasionally a patient will describe having had an adenitis in the groin or arthritis. This is rare. The presence of the "maculæ gonorrhoicæ" of Saenger [17] is presumptive evidence of gonorrhea. These consist of a redness and puffiness similar to the wheal caused by a flea-bite at the orifices of Skene's glands and Bartholin's glands. The redness persists long after all active suppuration has ceased.

In examining a woman for chronic gonococcus infection, it is important that she should come to the examination without previous douching or cleansing of the genitals. She is to be examined in the dorsal position. The labia are separated and the discharge removed gently with pledgets of absorbent cotton. Smears are made from the pus expressed from the orifice of a gland of Bartholin. The physician's forefinger inserted into the vagina making backward pressure on the perineum to gain room and to avoid pressure on the urethra. Then the urethra is stroked with the forefinger from above downward and any secretion which may be present is expressed and gathered on a sterile probe or applicator and transferred to a cover glass. The orifices of Skene's glands are carefully scrutinized for the presence of surrounding redness and pus. A speculum is introduced into the vagina and with the aid of a sterile applicator a smear is made from the discharge from the cervical canal.

The detection of the gonococcus in the discharge by staining and Gram decolorizing is proof positive of the disease. Some authors (Calmann, Klein and Fritsch) have insisted on the necessity of making cultures of the gonococcus. On account of the great difficulties surrounding the growing of this bacterium outside the tissues of

[17] Centralbl. für Gyn., 1896, p. 1073.

the human body this is seldom done in practice, although it may furnish valuable confirmatory evidence. Finding the gonococcus in bits of tissue removed at the time of operations on the genitalia is proof of the nature of the diseased condition. Too often the diagnosis of chronic gonococcus infection must be only a probable one because of the difficulty in finding the gonococcus.

REPORT ON MENTAL DISEASE.

BY HENRY R. STEDMAN, M.D., BROOKLINE, MASS.

THE RESPONSIBILITY AND DISPOSAL OF THE "HALF-INSANE" AND ALLIED QUESTIONS.

In the past few years an unusual amount of interest has appeared in the problem of the interrelation of vice, crime and insanity. In the numerous contributions to the subject practical suggestions have held a somewhat larger place than heretofore. Matters which especially appeal to the psychiatrist are the study of the criminal mind by the psychologist, the renewed discussion of the vexed question of the limits of responsibility for crime in "borderland" insanity, and the unanimous advocacy of special institutions for the care and custody of the offender or criminal of this type and the better protection of society thereby. Investigations have been made by several observers into the mental condition of criminals at the time of sentence and the need made evident of a psychiatric service in connection with tribunals and more thorough expert examination of prisoners generally.

Grasset [1] discusses the medico-legal aspect of crime committed by persons who, through genius, heredity, upbringing or trouble, are not wholly insane, and he refutes the theories forced upon the nation by antiquated legal restrictions that all persons are either crazy or not crazy, responsible or irresponsible. He establishes a middle class, which, he states, has never yet been recognized by society; a class which society must treat, and against which society must protect itself. The half-insane exist. It is equally erroneous to class them either with the insane or with the sane. They are different from the sane in that they are psychically afflicted, and from the insane in that they preserve a certain degree of reason. He mentions an interesting list of geniuses, including authors, musicians, reformers of his own and other European countries, whom he considers, as did Nordau, not wholly sane. But whereas Nordau unjustly grouped them all with the insane, he more exactly defines their position as "demifous." As to their responsibility, when a "demifou" has committed a crime he has become injurious to society. He is dangerous. Society still owes him assistance and treatment, but it also has a right to defend itself against his misdeeds. For him, one must not choose either a prison or an asylum; he needs both. He believes in shortening sentences, special regimen and penitentiaries, special surveillance and treatment after one sentence, and a special institution, or at least a special section of some institution, for the "demifous," or half-insane.

Marandon de Montyel [2] emphasizes the distinction between the criminal lunatic, the insane criminal and the perverse, the latter plainly belonging, it seems to us, in another class of demifous,—the morally insane. The first commits his crime on account of his insane condition, the second is criminal at the start and later becomes insane, while the third is not properly to be considered as insane at all, his memory, reason and judgment being sound, his deficiency presenting itself in the moral sphere alone. Each of these classes of cases requires different treatment, and it is an injustice to each to keep them together as has been done heretofore, and is to a large extent still the practice. The study of the third class, the perverse and their management, is most important. They are the terror of asylums. They know perfectly well their rights, that they are not insane, and are only through an injustice confined along with the insane, though they are ready enough to use the asylum as a place of refuge and support, especially through the inclement season of the year. By their egotism, their quarrelsomeness, their insubordination and ability to evade the rules, to fashion keys and weapons, and by their bad influence over the other patients, they keep the institution in constant turmoil, and through the reckless carrying out of their schemes are a source of danger, though their crimes do not so generally take the form of violence, as of swindling, malicious mischief, and mean and dirty tricks. They are, he considers, not mentally deficient — an opinion which is open to question — and are capable of education, but the defect in moral control is congenital and can rarely be overcome. They differ in all particulars from the ordinary insane, criminal or otherwise, but while the good of the community demands that they be sequestered they should be provided for in special institutions, which should be constructed strongly enough to prevent their escape, and in which there should prevail a discipline more rigid than in an ordinary asylum, and yet less strict than in a prison. Here they should not only be cared for but should be taught trades of some sort, and given such moral training as possible. Into these institutions they need not be committed for life, but in the interest of the community their discharge should be hedged about with such precautions as to insure that their condition is sufficiently improved to make it unlikely that they will continue to be a danger to the public. The author discusses at some length the general plan of such an institution, and the legislation on the subject which he thinks is needed.

Morel [3] makes an earnest plea for the thorough and individualized study, by trained psychiatrists of all cases of habitual criminals, the great majority of whom are afflicted with mental

[1] Demifous et Demiréponsables: Par Grasset, 1907, and Jour. Nerv. and Ment. Dis., November, 1907.

[2] Marandon de Montyel: Jour. de Neurol., xi, 9, 1896, and Jour. Nerv. and Ment. Dis., February, 1907.

[3] Morel: Jour. de Neurol., xi, 12, 1906, and Jour. Nerv. and Ment. Dis., February, 1907.

defect, more or less pronounced. Also, for the establishment of institutions for the medical care and training of such individuals. The author insists upon the inutility of punitive measures in cases of this character, and believes that better results are to be expected by medico-pedagogical methods.

Toulouse and Crinon,[4] discussing the problem of responsibility, do not undertake to define the nature of crime or of the social reaction against it, though on this point they seem to be in harmony with the modern positivist school, and they remark that the protection of society is much better guaranteed if, instead of regarding "punishment" as a method of correction, we regard it as "above all a measure of treatment." As responsibility is based on lucidity of consciousness and capacity for voluntary effort, which vary as we pass from normal to abnormal individuals, punishment (if the word is still to be used), to be just, must vary correspondingly, according to the psychological conditions. Thus it comes about that the medical expert is asked to decide the state of an individual's "responsibility." At this point there is a division of opinion. Some authorities assert that the idea of responsibility is not a medical or even a scientific conception; that the medical expert who expresses an opinion on this matter is going beyond his own field, since he is only justified in stating the actual medico-psychological facts which he can find in the individual presented to him. The authors do not share this opinion, but assert that the problem of penal responsibility is a psychological problem, and the recent investigations into the attitude and power of the criminal mind undertaken by Münsterberg and other psychologists lend color to their view. The current methods of psychiatrical observation, the authors declare, are altogether insufficient, being superficial, narrow and involving no elements of exactitude. It is by the systematic application of experimental methods that we can alone learn precisely how far an individual is abnormal in intelligence and aptitude for voluntary effort, how far he is capable of education, and what treatment he requires. Italy, the authors believe, is now leading the way along these paths, and they refer especially to the medico-legal methods used by Tamburini.

A purely psychiatric preparation no longer suffices to equip an expert in this field, the author concludes. It is necessary, but is not sufficient; familiarity with the methods of the psychological laboratory is also required. This is all the more important since criminals must not be divided beforehand into vicious and insane. Every inculpated person should be examined by an expert. This is necessary not merely to discover those who are, in the ordinary sense, insane, but for the more difficult and important end of ascertaining how far those who are not technically insane are susceptible of medico-psychological treatment. The authors incline to think that all criminals should receive sentence (although their actual presence in court might in some cases be dispensed with); for it is for the judge, representing society, to determine what persons are, in their present condition, unfit for society; but for all serious offences the indeterminate sentence is the only one that should be permitted. In all cases, also, there should be a preliminary period of observation before the method of treatment is decided and the offender classed. The prison must be a hospital. The medical expert, however, should remain only an expert, and it would be for the judge to sanction or not his recommendations. Not all these ideas, the authors remark, are yet realized, but they are meeting with less and less opposition and it is becoming generally recognized that simple criminals and insane criminals are not essentially different.

A report made at the recent Lisbon Congress of Medicine gives us Van Hamel's[5] views as to the aims which should guide the administration of penal reform, and they are in many respects similar to those of the French collaborators. The object of penal reform should be the diminution of crime. This is an end at once practical and realistic, and should not have as its point of departure any dogmatic religious, philosophical or ethical system. The object should be to decrease the number of criminals, not to increase the number of those punished. The combat against crime should be regulated by scientific study of its causes,—criminal etiology. These causes are general and personal. The general causes are mainly social; the personal causes, anthropological. Penal justice should dispense measures of social education to corrigible, measures of social protection to incorrigible, criminals. The distinction between young and adult criminals is of less value than one based upon psychological state, social needs, and to what extent they are in danger to the community. Much latitude should be left to the judge in the choice between a number of educational and protective measures. In order to assist him to make a proper choice, a psychiatric service should be attached to each tribunal and to each correctional establishment.

This recommendation of Van Hamel is among the reforms advocated earlier by Colin and Pactet in their conjoint monographs on "Les Aliénés devant la Justice" and "Les Aliénés dans les Prisons," based on extensive investigations of the prisons and judicial methods of France. They are convinced that the only effective means of avoiding the imprisonment of the insane as convicts would be the examination of the accused by an alienist on his arrest as the first step in every criminal case. This opinion which, they admit, may seem a utopian idea to-day will be accepted as a matter of course to-morrow.

[4] Toulouse and Crinon: Rev. de Psychiat., July, 1906, and Jour. Ment. Sci., January, 1907.

[5] Van Hamel: Jour. de Neurol., xi, 8, 1906, and Jour. Nerv. and Ment. Dis., January, 1907.

A Psychiatrical Clinic in Brooklyn.— Dr. O. M. Dewing, superintendent of the Long Island State Hospital, announces that a psychiatrical clinic will be held at the hospital, every Friday at 9 A.M. Interesting cases will be presented at the clinic, and an opportunity given for examination of these cases and a general discussion.— *New York Med. Jour.*

Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THIRTY-THIRD ANNUAL MEETING,
HELD AT COLUMBUS, OHIO, OCT. 8, 9 AND 10, 1907.

(Concluded from No. 22, p. 734.)

THE RELATIONS BETWEEN THE MEDICAL PROFESSION AND THE PEOPLE.

PRESIDENT H. H. GRANT spoke on this subject. He said that we all realized that the world was full of wretchedness, deformity and disease; that this was due to ignorance and cupidity, distributed well over the whole population from rich to poor. All realized the measures of relief must be a slow and gradual reform, conducted by a concentration of many influences, wielded by society at large. All realized the obstacles to success, as well as the possibilities of abuse in the methods, and all knew the need of a directing influence which was thoroughly informed and could be confidently intrusted with power. It was his belief that through the trust and the support of the general public, given to a conscientious medical profession, disinterested as a body, with identical concerns with the public, a highly comforting progress would soon be recorded. With a view to the hopeful advance of these noble and world-rewarding benefactions, the profession of medicine, without jealousy or thought of self-interest, should devote its wisest and most faithful workers as chieftains; let the lay and the religious press, ever ready upon conviction as earnest and determined associates, with unremitting zeal uphold and champion the cause, and add to this the patient and never-failing confidence of a liberal and trusting general public rallying its invincible support, and there would open up before the coming generation such a prospect of achievement and victory as would be a soul-satisfying record.

NEURASTHENIA GASTRICA.

DR. CLEMENT R. JONES, of Pittsburg, reported four cases of this condition, and concluded that neurasthenia gastrica or nervous dyspepsia was frequently due to or complicated by eyestrain; that other gastric disturbances were sometimes aggravated by eyestrain; that along with other points in the examination of gastric cases this should not be neglected. When eyestrain was the cause of gastric symptoms the relief by proper refraction was prompt and satisfactory.

DR. R. D. CLIPPINGER believed that eyestrain often produced all the symptoms of an old so-called chronic gastritis. The general practitioner was apt to ignore the eyes.

DR. MARK D. STEVENSON found that very many patients were relieved of nausea and vomiting by the wearing of proper lenses.

DR. GEORGE P. SPRAGUE said that so-called gastric disturbances in neurasthenia were very often roundabout reflex disturbances due to vertigo; in one case a lack of equilibrium due to a visual defect; in some other case not. He found very commonly in sending neurasthenics to oculists for the correction of eyestrain that until the attention of the oculist was called to the possible psychic connection between the patient's condition and the visual defect, he very often failed to give the correction, which he could and did do after that had been called to his attention.

REINFECTION WITH SYPHILIS.

DR. A. U. WILLIAMS, of Hot Springs, Ark., had seen a number of cases in which he had suspected reinfection. In many the history of the first attack was indefinite and unreliable. In but very few cases was the history sufficiently plain to make anything like a positive diagnosis of a second attack. He cited two cases in which the symptoms and history were so plain that he thought he could safely claim both as cases of reinfection.

TOXEMIA FROM THE STANDPOINT OF PERVERTED METABOLISM.

DR. RALPH W. WEBSTER, of Chicago, Ill., concluded that toxemia, aside from that following the acute or chronic bacterial processes, was always of metabolic origin. The toxemias under discussion were more the effects of a general metabolic perversion than of a direct organic disorder. A specific toxemia, in the sense that it was due to a specific substance, was unknown in the class of toxemias treated.

DR. THOMAS HUNT STUCKY, of Louisville, Ky., followed with a paper in which he discussed auto-intoxications of intestinal origin which resembled typhoid fever.

THE TREATMENT OF SCARLET FEVER AS A STREPTOCOCCUS DISEASE.

DR. J. E. COLEMAN, of Canton, Ill., had treated this disease with carbolic acid internally and externally, together with small doses of aconite, the first few hours until fever was allayed. In all of the cases he had thus treated the disease was materially shortened, the rash rapidly faded, and on the second day the fever disappeared and the throat symptoms were also relieved. When this treatment was used, there was not any desquamation of the skin, nor any after-effects from the disease, such as nephritis, or discharge from the ear. He had successfully treated cases of scarlet fever by the application of the two remedies mentioned since the time of an epidemic of the disease, year after year, admitting, however, that the results obtained might possibly have been due to the fact that the disease ran a benign course.

RELATIONS OF THE DOCTOR TO THE ALCOHOLIC PROBLEM.

DR. T. D. CROTHERS, of Hartford, Conn., showed the intimate associations of alcohol with a large part of the mortality, disease and degeneration of the present time, and urged the profession to take up the physical study of the subject. He showed that the mortality from alcohol, both direct and indirect, was from 10% to 20% of all deaths, and at least 10% of all diseases were very largely influenced and due to this cause; also that from 20% to 50% of all mental diseases and 50% of idiocy, pauperism and other degenerative conditions had an alcoholic causation. Fifty per cent of all criminals serving sentences for crime in 1906 were due to the influence of alcohol. Nearly half a million persons came under legal recognition for intoxication and petty crimes last year. Reliable authorities showed that 50% of all railroad and other accidents were due to the mistakes of persons under the influence of spirits. Beyond this the losses, the revolutions and injuries noted in every community assumed great proportions. This problem was a physical and medical one. Every advance in science showed that there were physical causes which developed from distinct sources which could be studied and known, and that the whole subject was not a mass of theories, but one of facts the same as that of epidemic and contagious diseases. The evils had reached such a stage that public opinion was making Herculean efforts along theoretical lines to overcome and break it up. The author urged that it was a medical subject to be understood by medical men. When the facts were studied

and known, the remedies and methods of prevention would be clear and practical. The failure of physicians to know the subject had brought in an army of gold cures and quacks whose presence was a reflection on the intelligence of the physician who understood and treated these people. The great temperance movement should be directed and managed by physicians along exact lines of scientific study, above all prejudice; then they would become practical, and reach to the bottom of the great drink problem and point out the methods of cure and prevention. When medical men were taught to recognize the physical side of this problem and study the facts alone, irrespective of all theories, then the mortality and disease would disappear.

THE RECOGNITION AND MANAGEMENT OF ACUTE MASTOIDITIS BY THE GENERAL PRACTITIONER.

Dr. Leartus Connor, of Detroit, Mich., in a paper on this subject, drew the following conclusions: (1) Cases of acute mastoiditis should be regarded as seriously ill, placed in bed, given a brisk cathartic and diaphoretic, and the diet limited to at least one half. (2) If there be present tenderness of the mastoid, redness and bulging of the inner, upper and posterior external auditory canal and adjacent membrana tympani, Wilde's internal incision should be promptly done. (3) Regular irrigation with water, as hot as could be endured, should precede and follow the incision, and dry heat follow during the interval of irrigation. (4) An aseptic should be applied to the wound after each irrigation; a 50% solution of argyrol on a cotton-tipped probe was convenient and useful. (5) Thus managed, many cases of acute mastoiditis would speedily recover. (6) If they grew worse steadily, the mastoid should be promptly opened, all diseased tissues removed, and the wound dressed aseptically. (7) A painful deaf ear merited quite as careful attention as a red painful eye, or a painful stiff limb. Until this be accorded it, physicians would continue to have cases of extensive destruction of mastoid bones, permanent loss of hearing, infection of lateral sinus, facial paralysis, subdural, cerebral, and cerebellar abscess, and death labelled "the disease went to the head," and "the body to the boneyard."

MORPHINE ADDICTION.

Dr. George P. Sprague, of Lexington, Ky., discussed some of the essential points in the etiology, pathology and treatment of those addicted to morphine. He divided the cases into three groups: First, a small one composed of normal individuals, who from unwise treatment for pain in acute illness had contracted the habit. A second larger group of moral degenerates who indulged in the vice of morphinism, and a third, and much the largest group, recruited from among the neuropathic weaklings, from the victims of improper training and lack of early discipline; from the vast army of defectives, who, beginning to lose ground in the race of life, resorted to drugs as a spur, and from the large number who, suffering from sudden shock of disease, loss, etc., resorted to the drug in the hope of obtaining relief.

These patients should be under treatment for months; that the patient should not be alone a moment when he might procure morphine, day or night; that every one coming in contact with him must be above bribery, and that his nurse must be above suspicion, and ever suspicious. The patient's sense of right and power of will should be steadily stimulated, and every physical ill he might have should be found and vigorously combated.

THE NATURE OF MORPHINE DISEASE.

Dr. Chas. W. Carter, of Richmond, Ind., said that the physician who would understandingly and conscientiously treat the morphine disease must have a generous breadth of view in reading human character, an entire want of prejudice in interpreting symptoms and a broad and thorough knowledge of remedial agents.

MEDICAL INSPECTION OF PUBLIC SCHOOLS.

Dr. Frank W. Gavin, of Canton, Ohio, said the medical inspector should look after, first, the school building, its condition, ventilation, lighting, heating, seating, etc. Second, the inspection of candidates for teachers' certificates in the principles of preventive medicine and school hygiene. Third, physical and mental condition of the child.

He pointed out the advantages of medical inspection and the methods of examination. The salary of a medical inspector should be generous, thus warranting the selection of the best men procurable. He sincerely believed it would be money wisely invested on the part of cities and municipalities.

URINARY INFECTIONS IN CHILDREN.

Dr. I. A. Abt, of Chicago, Ill., pointed out the avenues through which micro-organisms gained access to the bladder and to the pelvis of the kidney in these infections. Bacteria might enter the bladder through the urethra and migrate upwards to the bladder and thence to the kidney. The infection might be hematogenous in character, the micro-organisms finding access into the bladder through the blood vessels. The micro-organisms might pass in some manner from the bowel through the loose cellular tissue of the pelvis into the bladder. The fact that sometimes a bowel infection, particularly follicular enteritis, preceded an attack of cysto-pyelitis, had suggested this view. Congenital malformation of the bladder and kidney predisposed to cystitis and pyelitis. Such a case had come under his observation. This was given in great detail. He described the symptoms and course of the disease.

With reference to treatment, the ordinary urinary antiseptics in one form or another used internally would usually bring about the desired result. In the severe forms of streptococcus or staphylococcus infection the vesical irrigation might be indicated. In other respects the treatment was purely expectant and symptomatic. The pain and restlessness might require the use of antispasmodics and sedatives.

The following papers were likewise read: "The Profession of Medicine, as it Was, and as it Is," by Dr. Robert Barclay, of Pittsburg, Pa.; "Purulent Conjunctivitis in Infants and Adults," by Dr. Mark D. Stevenson, of Akron, Ohio; "Gelseminine," by Dr. Wm. F. Waugh, of Chicago, Ill.; "Colorado and the Eastern Pulmonary Case," by Dr. W. A. Campbell, of Colorado Springs, Colo.; "Pregnancy when Complicated by Tuberculosis," by Dr. Harold A. Miller, of Pittsburg, Pa.; "The General Practitioner's Attitude toward Eyestrain," by Dr. Richard D. Clippinger, of Bellefontaine, Ohio; "Gallstones as an Etiological Factor in Diabetes," by Dr. J. C. O'Day, of Oil City, Pa.; "A Résumé of Gallstone Factors," by Dr. R. Alexander Bate, of Louisville, Ky.; "The Psychasthenic States," by Dr. Chas. W. Hitchcock, of Detroit, Mich.; "What we Learn from Analysis of the Feces," by Dr. Joseph A. Sweeney, of Louisville, Ky.; "A Contribution to the Literature on the Pathology, Etiology, Symptomatology and Technic of the Operation of Supravaginal Hysterectomy for Fibroid Tumors of the Uterus," by Dr. Frank D. Smyth, of Memphis, Tenn.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. Arthur R. Elliott, of Chicago; Vice-Presidents, Dr. F. F. Lawrence, of Columbus, Ohio, and Dr. Robert C. McChord, of Lebanon, Ky.; Secretary, Dr. Henry E. Tuley, of Louisville (re-elected); Treasurer, Dr. Samuel C. Stanton, of Chicago (re-elected).

The 1908 session will be held in Louisville in October.

Book Reviews.

Practical Physiological Chemistry. By PHILIP B. HAWK, M.S., Ph.D., Demonstrator of Physiological Chemistry in the Department of Medicine of the University of Pennsylvania. Philadelphia: P. Blakiston's Son & Co. 1907.

This work on physiological chemistry is a comprehensive one and is unusually complete and yet at the same time practical. The author has presented some of the subjects in a rather different manner from that ordinarily found in books of this kind, and this is particularly true in connection with the treatment of food stuffs and their digestion.

Considerable attention has been given to the examination of feces for purposes of diagnosis; also to the subjects of epithelial and connective, muscular and nervous tissues.

Many of the illustrations are original and some are excellent. The work is certainly a credit to the author.

A Short Practice of Medicine. By ROBERT A. FLEMING, M.A., M.D., F.R.C.P.E., F.R.S.E., Lecturer on Practice of Medicine, School of the Royal Colleges, Edinburgh; Assistant Physician, Royal Infirmary, Edinburgh. Philadelphia: P. Blakiston's Son & Co. 1906.

"The writing of a new book on the practice of medicine demands an apology, or at least an explanation." So the author begins his preface. It is the duty of the reviewer to determine whether the author's explanation justifies the book or not. In doing this, fairness requires that the book be considered within the limitations set by its author. These limitations are that the book should be small and so adapted for use in the class-room. It is intended mainly to be used in this way, as a general outline in connection with cases in the clinic and in preparation for examinations. It is a short practice of medicine and it does not contain descriptions of clinical laboratory method.

The reviewer does not believe there is much need for such a book, because the larger textbooks in one volume contain far more information, are not greatly more bulky (this volume is in no wise a pocket edition) and cost but little more. To obtain a smaller volume, omission and condensation are necessary, whereas as a matter of fact, in the larger single volume textbooks this process has been carried already dangerously near the limit. Granting, however, that there is some need for such a small textbook and recognizing the necessity for much selection as to what should be described with each disease, it remains to be determined how well the book has been made under these conditions.

Those portions which treat of diseases of the various systems,— respiratory, circulatory, nervous, etc.,— have been condensed in a fairly satisfactory manner. The specific infectious diseases have not been handled so well, and here a number of statements are met to which exception can well be taken. The space given to the classification of fevers might better be devoted to something else since the classification used is both loose and antiquated. The discussion of the general treatment of fever is too discursive and indefinite to harmonize with a book in which brevity is a prime object.

In discussing typhoid fever the impression is given that cicatrization of the ulcerated gut is an important process, whereas we know that usually the ulcers heal so perfectly that in a short while there is but little to indicate a previous lesion. The Widal reaction is described twice within six pages, an unnecessary repetition, and unfortunately the method given the second time differs somewhat from the first. Under "isolation of bacillus" no mention is made of blood cultures, and splenic puncture is given as the best method. Diet, the all-important factor in treating typhoid, receives but scant attention.

Confusion may arise in the student's mind when an organism is spoken of in one place, as the Klebs-Löffler bacillus, and in another, as the Löffler bacillus. Such an instance is an example of what occurs in several places and indicates a lack of careful editing. "A continuous spray of steam . . . upon the patient's face," if followed to the letter by the student, would surely lead to dire result, yet there is nothing to indicate what is meant by this therapeutic suggestion for the treatment of diphtheria. In describing the cultural characteristics of the influenza bacillus, the necessity of the presence of hemoglobin in the culture media is not mentioned.

Too much importance apparently is attached to the presence of the pneumococcus in the sputum as a diagnostic point in pneumonia, and many would not agree with the direction, "never let the patient sit up," as best for all cases of pneumonia. All of the points here criticised are in that part of the book which deals with the infectious diseases, and much of this might readily be improved in subsequent editions.

In the other parts of the book some mistakes occur, but they are infrequent and the statements given are for the most part acceptable. The book itself is well printed and in general well written. The reviewer believes that the attempt to make a short treatise on medicine is exceedingly difficult, and the present attempt is perhaps as successful as could be expected from any author. Why an author should be willing to plunge into these difficulties is not easy to see. Many, however, do take the plunge, and get into more difficulty than does Dr. Fleming.

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ADOLESCENCE.

SOME three years ago Dr. J. Stanley Hall produced an important work entitled as above. He now submits a briefer and perhaps more practical volume: "Youth, Its Education, Regimen and Hygiene,"[1] in which is contained the gist of the former book. The subject must indeed appeal to every experienced physician who has seen families grow up from infancy under his professional care, who knows of the aberrations which come about at the most difficult period of puberty.

Two great forces dominate life: Hunger, by which existence is maintained, and that force which is concerned in the perpetuation of the race. And the latter, at the beginning of its influence, is likely to be well-nigh destructive, both physically and to the psychism, if the organism has not been properly developed and educated for its reception. Dr. Hall's work is based entirely upon the principles of muscle culture and muscular development. Physical training is good not for the body alone; he believes that the very growth of the brain depends upon the growth and use of the muscular system, that mental and moral natures have developed as the accessory muscles have increased in number and have grown into use. In his belief human progress, indeed, lies in increasing the capabilities of both fundamental and accessory muscles. And it is these principles which Dr. Hall would apply to the regimen of the adolescent period. He gives also much attention to the needs of childhood between the seventh and the twelfth years. Several chapters in this valuable book (doubly valuable because of its detailed descriptions and directions) set forth the respective advantages, methods and results in muscular training and in physical, mental, and moral development, of industrial education, manual training and sloyd, various systems of gymnastics and of play, sports and games. Herein we see justified those university authorities who encourage athletics in their students, lest worse mischief befall them.

Dr. Hall is not a medical man; he is a psychologist. Some dozen years ago he began to deliver lectures upon adolescence from his viewpoint. Soon friends and strangers alike approached him for guidance of their offspring, who were in or near this critical age. The interest in his work grew, until at one time more than twelve hundred letters were on file in his office from parents anxious concerning the development and welfare of their children. He began to realize that had he been a physician he might have found himself with a large practice from such cases. All kinds of questions, some of them quite impossible, are asked him about young people, "who are bright, geniuses, dullards, born short, one-sided in their mental, physical or moral development," etc. Some letters "contain long and pitiful tales of obvious ignorance, misunderstanding, wandering from doctor to doctor, and getting no relief and no insight." Wherefore Dr. Hall concludes, and the suggestion may be worthy the attention of physicians desirous of embarking upon a special work, that as gynecology and pediatrics have become specialties, there is now place for another specialty, in the treatment of adolescent affections of mind and body. Only let no colleague undertake this task who cannot comprehend the maxim of Hippocrates: "God-like is the physician who is also a philosopher."

[1] Messrs. Appleton & Co., publishers.

THE COLLECTIVE INVESTIGATION OF DISEASE.

A NOTABLE tendency during the past few years has been the increase of co-operative work in the investigation of medical problems. The work of the individual investigator is more and more being carried out with reference to others, and often in definite co-operation. The general enthusiasm regarding the tuberculosis problem, painstaking investigation by groups of men of the etiology of cancer, the tendency, in general, to enlist the interest of all working on the same subject, is everywhere apparent. The usefulness of such a method cannot be questioned, as we have had occasion to point out on various occasions. Medical problems of the future are likely in great measure to be solved by the combined

efforts of many persons working toward a given end, but from different points of view. The promise, for example, in such an establishment as the Carnegie Institute for Medical Research lies not so much in the fact that this man or that is pre-eminent as an investigator, but rather that there are gathered together under one roof many investigators pursuing their researches from more or less different points of view, but with a common purpose.

Recent examples of this salutary tendency toward co-operation is shown by the attempt which is now going forward to obtain comprehensive statistics on the disease poliomyelitis, now so prevalent, and to subject these statistics to the scrutiny of men especially qualified to determine the various questions which such statistics present. If, for example, the cerebrospinal fluid taken from a large number of cases and studied by the same methods shows nothing of significance, we may certainly rest assured that unless entirely new methods of investigation of this fluid are discovered, we may not hope for a solution of the problem of etiology from this source.

Again a permanent committee has recently been formed by the National Association for the Study of Epilepsy, composed of three men, whose interest in and knowledge of the subject is acknowledged, to act as an advisory board with the specific object of furthering the co-ordination of scientific and research work in epilepsy, and also to act as advisors to any workers in epilepsy who choose to apply to them. Here again such a concentration of authority in the hands of a few well-equipped men is sure to bring about the co-operation essential to the elucidation of the problem of epilepsy, to prevent waste of effort and repetition of work, and to afford the highest possibility of reaching results of positive significance.

Many other instances might be cited in which this principle of co-operation, varied to meet the different demands of the problem under consideration, might be applied with advantage. Such co-operative work could by no possibility interfere with personal initiative nor detract from the credit due to special investigators. The questions at issue are becoming so complex and are encroaching upon the domain of so many correlated sciences that future students must in great measure come to a candid acknowledgment of this fact, and accomplish results through adoption of methods of research, in which the co-operative element will be a predominant factor.

MEDICAL NOTES.

THE AMERICAN JOURNAL OF ORTHOPEDIC SURGERY. — The *American Journal of Orthopedic Surgery* has decided to add one or more monographs of not less than twenty pages to its regular one hundred and thirteen pages of practical papers and fifteen pages of abstracts of orthopedic literature in every number.

The *American Journal of Orthopedic Surgery* is the only periodical in the English language devoted exclusively to Orthopedic Surgery and borderland subjects. There are three published in Germany, one in France and one in Italy.

FEAR OF PREMATURE BURIAL. — The *Lancet* states that about a month ago a London newspaper chronicled the fact that a woman on the Continent had been buried with a loaded revolver in her hand ready to end her existence should she subsequently in her coffin become cognizant of her surroundings.

A POSSIBLE CURE OF LEPROSY. — It is reported that the Board of Health of Honolulu, on the petition of a large number of lepers at the Molokai settlement, have issued a permit to J. Lore Wallach, who claims that he has a method of cure, to treat twelve lepers from the settlement.

CENTENARIANS. — The following persons are reported to have lived upwards of one hundred years: W. R. Chambers, supposed to be the oldest resident of Pennsylvania, died Nov. 24, in Pittsburg, at the age of one hundred and five years, remaining in possession of his faculties to the end of his life.

Mrs. Vannelia Hull has recently died at the age of one hundred and one years, also in Pittsburg. She had lived in and about that city for ninety-five years, and is reported to have seen the first steamboat in that region and also the first coal taken from the mines of Pennsylvania.

Probably the oldest woman in Massachusetts, Mrs. Sarah Ingalls, died at Winthrop recently at the reputed age of one hundred and five years. She was born in Ipswich, June 30, 1802.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Dec. 4, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 67, scarlatina 43, typhoid fever 8, measles 23, tuberculosis 33, smallpox 0.

The death-rate of the reported deaths for the week ending Dec. 4, 1907, was 18.65.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 30, 1907, was 201, against 167 the corresponding week of last year, showing an increase of 34 deaths and making the death-rate for the week 17.20. Of this number 101 were males and 100 were females; 198 were white and 3 colored; 123 were born in the United States, 76 in foreign countries and 2 unknown; 47 were of American parentage, 126 of foreign parentage and 28 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 66 cases and 3 deaths; scarlatina, 49 cases and 0 deaths; typhoid fever, 10 cases and 0 deaths; measles, 25 cases and 1 death; tuberculosis, 44 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 30, whooping cough 0, heart disease 31, bronchitis 8 and marasmus 1. There were 10 deaths from violent causes. The number of children who died under one year was 29; the number under five years, 39. The number of persons who died over sixty years of age was 60. The deaths in public institutions were 65.

There was 0 cases and 1 death reported from cerebrospinal meningitis during the week.

Bequests. — By the will of Ann Thomas, the Holy Ghost Hospital for Incurables in Cambridge receives the sum of $500. By the will of the late Frederick Tompkins, of Newport, R. I., the Newport Hospital receives $2,000. The Lynn, Mass., Hospital receives $5,000, through the will of the late M. A. Fenton of that city.

Dr. Harvey W. Wiley, a Speaker at the John Harvard Celebration. — Dr. Harvey W. Wiley, of Washington, was one of the speakers at the recent celebration of the three hundredth anniversary held in Cambridge, of the birth of John Harvard, at the invitation of President Eliot. The subject of his address was "The Food and Drug Law."

A Lecture by Dr. W. T. Grenfell. — It is announced that Dr. W. T. Grenfell, widely known for his missionary and medical work in Labrador, will give a lecture at the Harvard Union in Cambridge, Dec. 10. His coming will be of particular interest this year, because of the recent completion of an endowment of $1,500 of a bed in one of his hospitals.

Another Leper for Penikese Island. — After a careful study of Bertha Osis, extending over two months, who was suspected of leprosy when she presented herself at the Massachusetts General Hospital, the diagnosis has finally been confirmed and she has been removed to the leper colony at Penikese Island. The bacilli of leprosy have repeatedly been demonstrated while she has been under observation.

Opening of Massachusetts Hospital School for Crippled and Deformed Children. — A portion of the building of the Massachusetts Hospital School for Crippled and Deformed Children at Canton was opened this week. It is estimated that the buildings will accommodate three hundred patients, and the effort will be made so to conduct their education that they later may become self-supporting. The location of the hospital, on the borders of the Blue Hill Reservation, is an exceptionally favorable one for its purpose. The superintendent is Dr. J. E. Fish, a graduate of the Dartmouth Medical School, and a man of experience in the administration of charities. Although the school is primarily a state charity, nevertheless the trustees, of whom Dr. Edward H. Bradford, professor of orthopedic surgery in the Harvard Medical School, is chairman, have power to admit paying patients. A chief aim of the institution, following modern philanthropic ideas, is to make the inmates, so far as possible, self-supporting.

Meeting of Massachusetts Medical Benevolent Society. — The annual meeting of the Massachusetts Medical Benevolent Society was held at the Boston Medical Library at 5 P.M., Oct. 31, the president, Dr. James C. White, in the chair; fifteen members present. The reports of the secretary and treasurer were read and accepted; that of the latter showing the par value of the invested funds to be $60,925 and the number of beneficiaries 14. The following officers were elected: President, Dr. James C. White; Vice-President, Dr. George W. Gay; Treasurer, Dr. W. L. Richardson; Secretary, Dr. W. H. Prescott, 285 Marlborough Street. Trustees to serve for three years: Dr. Vincent Y. Bowditch, Dr. Henry Jackson, Dr. Hardy Phippen. The following extract, from the Act of Incorporation, will show the objects of the society: "For the purpose of affording pecuniary assistance to members of the medical profession, their widows and children."

NEW YORK.

For Medical Research. — Announcement has just been made of an additional gift of $2,000,000, by John D. Rockefeller, to the Rockefeller In-

stitute for Medical Research, which brings the aggregate of his contributions to this cause up to $3,800,000. In his letter to the directors, stating his intention, Mr. Rockefeller expresses his gratification at the results thus far achieved by the Institute and his confident anticipation that the enlargement of its scientific work now made possible will lead to increased success in the future.

A CENTENARIAN. — Mrs. Margaret Horn died in the New York City Home for the Aged and Infirm on Blackwell's Island, on Nov. 27, at the age of one hundred and two years, having been born in County Cork, Ireland, in 1805. Her husband, Alexander Horn, is stated to have been one hundred and three at the time of his death, twelve years ago.

DIMINISHED MILK APPROPRIATION. — It is to be regretted that the Board of Estimate and Apportionment saw fit to cut down the milk appropriation for 1908 from $353,680, the sum asked for by President Darlington of the Health Department, to $68,580, and the Mayor's Milk Commission, composed of prominent physicians, has not hesitated to express the opinion that in so doing the city authorities have practised an unwise economy, since by providing stricter inspection they could undoubtedly have reduced the death-rate and the amount of disease. The Commission had recommended that the 25 inspectors for the country districts should be increased to 125, which would have permitted each farm furnishing dairy products to be visited about every six weeks, and that the New York City inspectors be increased from 15 to 40. The sum granted, however, will provide for but 10 additional inspectors, 8 for the country and 2 for the city.

A PARISH CONSUMPTIVES' CLUB. — Among the numerous philanthropic organizations maintained by St. George's Episcopal Church is the somewhat novel one of a Parish Consumptives' Club. In the parish are a certain number of young men and women suffering from tuberculosis, and some of these are unable to obtain adequate work and need financial assistance. All such it is proposed to care for, and while persons not belonging to the parish may join the club if they so desire, they are required to pay dues and the offer of financial aid is not held out. The great purpose of the club is stated to be not eleemosynary, but to encourage young people with pulmonary trouble to consult a physician and to promote among the members a cheerful frame of mind by inducing them to think of something besides themselves. To this end a variety of diversions are provided, while at the same time some measure of medical supervision is supplied, with advice as to the use of remedies and proper moods of living, with the services of skilled nurses in cases requiring them.

A TRIBUTE TO THE LATE DR. RICHARD H. DERBY. — At the last meeting of the Medical Association of the Greater City of New York, a committee, whose chairman was Dr. C. Cole Bradley, which had been appointed to prepare a suitable minute on the death of Dr. Richard H. Derby, presented its report. In the course of it the following tribute to Dr. Derby's public services was made: "He was an exceedingly public-spirited man, giving his time freely to every cause which he considered useful to the city and which had any demand upon his services. He was consulting ophthalmologist to the Health Department of New York City for many years, and in that capacity he became deeply interested in the ocular welfare of the children of the public institutions and of the public schools. In 1886 he brought to the attention of the Academy of Medicine the appalling prevalence of contagious ocular diseases in the public institutions for children and insisted on the need of legislation. After an exhaustive examination of the children by a committee composed of Fellows of the Academy, the law desired was drafted and passed. Later he brought before the Health Board the imperative necessity of caring for the eyes of the school children, devising ways and means for combating and treating the disease, then so prevalent amongst them. No greater charity has been performed by any man than this safeguarding and preservation of the vision of the orphans and waifs of our city and of our school children."

CELEBRATION OF SIXTIETH ANNIVERSARY OF THE NEW YORK ACADEMY OF MEDICINE. — The sixtieth anniversary of the New York Academy of Medicine was celebrated on Nov. 29. On the platform, in addition to the President, Dr. John A. Wyeth, were six ex-presidents of the academy, Drs. A. Jacobi, D. B. St. John Roosa, Wm. H. Thomson, Robert F. Weir, Edward G. Janeway and Charles L. Dana. The feature of the evening's exercises was an address by Col. W. C. Gorgas, of the Army Medical Service, chief sanitary officer of the Isthmian Canal Commission, which was illustrated by means of stere-

opticon views. In the course of it he said that when the United States commenced the great engineering work of making the Panama Canal, Colon and the city of Panama were as unhealthy as Havana before yellow fever was practically eradicated there by an efficient system of screening, draining and sanitation through cleanliness. The negroes seemed to resist the dangers of infection, but visiting whites fell an easy prey to the attacks of the inoculating mosquito. The government had devoted $2,000,000 to making the canal zone healthy, and to-day yellow fever had been annihilated, while malaria, though it still existed to some extent, had been very materially diminished. A reception and collation followed Colonel Gorgas's address.

Obituaries.

EDMUND S. F. ARNOLD, M.D.

Dr. Edmund S. F. Arnold, of New York, died at Jacksonville, Fla., on Nov. 22, in the eighty-eighth year of his age. His active professional career was principally passed at Yonkers, on the Hudson, where for many years he was one of the leading practitioners of the town. During this time he was the attending physician to the large Mount St. Vincent Academy, and he took great interest in gathering an unusually fine mineralogical collection, which he presented to that institution. Nearly twenty-five years ago he retired from practice and removed to New York. Here he engaged actively in society work, and he was one of the original members of the New York County and State Medical associations. For a time he was the treasurer of the former of these, and for a number of years the librarian of the State Association. In this capacity he spent almost his entire time in fostering the interests of the new library, and did monumental work in the way of arranging, cataloguing, etc. The library was started soon after the organization of the association, in 1884, and in 1888 it was enriched by the fine private library, consisting of about 1,700 volumes, of Dr. Isaac E. Taylor, which was presented by the owner. Quarters were given it in the Carnegie Library, and it remained there until May, 1890, when it was moved to the Mott Memorial Building; after which it was maintained in connection with the Mott Memorial Library. By the time of its removal the library had increased to over 8,000 volumes, of which nearly 7,000 were bound books. Of late years Dr. Arnold had spent all his winters in Florida.

GEORGE F. SHRADY, M.D.

Dr. George F. Shrady, the New York surgeon and medical writer, died on Nov. 30, from pneumonia, with complications, after an acute illness of two weeks. For some time past, however, his health had not been good, and he had practically retired from professional work. Dr. Shrady was born in New York City, where his family had long resided, on Jan. 14, 1837. Both his grandfathers served in the Revolutionary War, and his father in the War of 1812, while he himself was a surgeon in the Federal Army during the Civil War. He was graduated from the College of Physicians and Surgeons, New York, in 1858, and in that year was awarded the Wood prize for proficiency in anatomy. He became widely known as a surgeon, and among his patients were many of the prominent men of the past generation. He was one of the principal attendants of General Grant in his last illness; he was consulted by Sir Morrell McKenzie in the case of the Emperor Frederick, of Germany, and he was also one of the consultants after President Garfield was shot. He contributed constantly to surgical literature and was long connected with various hospitals and other institutions as attending surgeon. At the time of his death he was consulting surgeon to St. Francis', the General Memorial, Columbus, Willard Parker, and Hackensack (N. J.) hospitals. He was also regarded as an authority on pathology, and for a number of years was president of the New York Pathological Society.

Dr. Shrady will perhaps be best remembered for his brilliant work as editor of *The Medical Record*, and this periodical remains as the most fitting memorial of his talents. Founded by him in 1866, it soon became known as one of the leading medical journals of America, and obtained a very wide circulation. He conducted the *Record*, with signal success, for no less than thirty-eight years, retiring from the editorship in 1904. The matter contributed to it by him would fill many volumes.

Dr. Shrady is survived by his second wife and several children. He also leaves a brother, Dr. John Shrady, ex-president of the New York County Medical Association. Both the latter's sons are physicians, and one of them is at present a city coroner.

ALEXANDER MACTIER PIRRIE.
A MARTYR TO SCIENCE.

A career of great promise has been cut short by the untimely death of Mr. A. Mactier Pirrie. The son of the late Mr. Alexander Pirrie, C. E., he was born on Oct. 2, 1882. He obtained his B.Sc. with honors in anthropology at Edinburgh University in 1904, and qualified as M.B., Ch.B., in 1906. He obtained the Carnegie Research Fellowship in anthropology and was appointed anthropologist to the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. He went out to the Sudan in the autumn of 1906.

Under the direction of Dr. Andrew Balfour, the director of the laboratories, Dr. Pirrie made his first expedition up the Nile to the southern

limits of the Sudan and penetrated to remote parts of the Bahr-el-Ghazal. His second expedition took him to the borders of Abyssinia. On both occasions he passed through some of the most pestilential regions of Africa in connection with certain anthropological and physiological researches, appertaining to tropical diseases, upon which the laboratories are engaged.

Unfortunately he contracted tropical fever (kala-azar) and was so prostrated as to be compelled to return to England, leaving Khartoum on June 17 last.

He rallied from the effects of the fever from time to time, but was compelled to enter Chalmers' Hospital, Edinburgh, in October. His death took place on Nov. 12.

He was interred at the Dean Cemetery, Edinburgh, on Nov. 15. The Gordon Memorial College, Khartoum, Sir William Turner, principal and vice-chancellor of the University, Mr. Wellcome and others were represented and sent wreaths. A resolution of sympathy has been conveyed to the relatives from the trustees of the Gordon Memorial College, and other expressions of sympathy have been received from the Liverpool School of Tropical Medicine, etc.

It is of interest to note that the first case of kala-azar found in Africa, except a case in Tunis, referred to by Laveran, was reported by Dr. Sheffield Neave, pathologist to the Wellcome Research Laboratories, Khartoum. Dr. Neave found the Leishman-Donovan body, the parasite of kala-azar, in the splenic blood of a patient in the Omdurman Civil Hospital. The discovery is noted by the director in the Second Report of the Laboratories.

Dr. Pirrie presented a paper on his African expeditions at the last meeting of the British Association for the Advancement of Science, but was prevented from being present on account of his illness. He brought back a most valuable collection of objects of scientific interest.

At intervals during his illness he was engaged on his report to the Carnegie Institute and the Wellcome Research Laboratories, Khartoum, for which institutions he acted jointly in the important work he carried out in the Sudan.

Current Literature.

NEW YORK MEDICAL JOURNAL.
Nov. 9, 1907.

1. GONLEY, J. W. S. *Modern Lithotrity.*
2. KONKLE, W. B. *A Medical Crazy Quilt.*
3. ROSS, F. W. F. *Tuberculotherapy in Tuberculosis.*
4. HILL, I. L. *Asphyxia Neonatorum.*
5. CHILD, C. G. *One Hundred Consecutive Cases of Celiotomy for Pelvic Diseases in Women.*
6. ROSS, G. G. *Perforation of the Gastro-intestinal Tract by Swallowed Bodies.*
7. HANLEY, L. G. *Extra-uterine Pregnancy.*
8. *BRADDOCK, C. S., JR. *Treatment of Snake Bites as seen in the Jungle.*

8. Braddock, formerly chief medical inspector of the Royal Siamese Government, states that the python or boa rarely attacks people. Two snakes, the hamadryad and cobra, cause an annual death-rate in India of about 22,000 people. The hamadryad will always attack a man on sight. Nearly all bites are received after dark, by stepping on snakes or by lying down with the snakes in blankets or clothing. The poisonous snakes leave only the two punctures of the poison fangs. Hence, the marks of teeth in snake bites make the prognosis favorable. The treatment must be immediate and strenuous. A tight tourniquet is applied above the bite, the tissues are freely opened, and pure crystals of potassium permanganate are rubbed into the wound. A strong solution of permanganate is injected all round the bite. Nitroglycerin, digitalis, alcohol and strychnia are given in large doses. This treatment instituted early will usually save life. Otherwise death is fairly certain. [R. I. L.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
Nov. 9, 1907.

1. *PATRICK, H. T. *The Treatment of Trifacial Neuralgia by Deep Injections of Alcohol.*
2. HECHT, D'O. *The Methods and Technic of Deep Alcohol Injections for Trifacial Neuralgia.*
3. TYSON, J. *Treatment of Diabetes Mellitus.*
4. WILEY, H. W. *The Physician's Connection with Proprietary Remedies.*
5. RUHRÄH, J. *Some Needs of Institution Children.*
6. *MORSE, J. L. *Adenoids in Infancy.*
7. MASON, C. F. *Contagion as a Factor in the Spread of Typhoid Fever in the Military Service.*
8. *WALSH, J. J. *First Pictures of Surgical Operations Extant.*
9. KERLEY, C. G. *Tardy Malnutrition; its Treatment by Diet and Rest.*
10. GARDINER, J. P. *A Case of Congenital Hour-Glass Stomach with Accessory Pancreas.*
11. GRIFFIN, O. A. *Ocular Symptoms of Nasal Origin.*

1. Patrick has treated sixteen cases of trifacial neuralgia with deep injections of alcohol. Although it is too early to judge of permanent results, the immediate results are most satisfactory. As a rule there is no recurrence after several months at least. Then the injection can be repeated. The technic preferred is that of Lévy and Baudouin, which is that advised by Hecht (2). The principle is that of infiltrating the branches of the fifth nerves at their exit from the skull, viz., the supra-orbital immediately after entrance into the orbit, the superior maxillary after its exit from the foramen rotundum, and the inferior maxillary after its exit from the foramen ovale. The injection of the supra-orbital branch seems liable to be attended with danger. The injection of the other two branches is apparently not difficult and Patrick has done them in his office. The real difficulty is to strike the nerve. It is not necessary to inject the nerve sheath itself, only to have the fluid infiltrate it. Failure to strike the nerve may relieve the neuralgia for a few hours or days, and requires further injections until successful. The needle employed is of special make. It is fitted with a blunt stylet, which is pushed home after the skin is pierced, so that a blunt instrument is used for penetration of deep tissues. The fluid used is 70% to 90% of alcohol with a little chloroform and cocaine. Two cubic centimeters is given as a dose. The pain of the injection is surprisingly slight. Anesthesia was given in only one case.

6. Contrary to the general belief, Morse finds that adenoids in infancy are very common and of greatest importance. They may be the cause of frequent colds, otitis media, cough, croup, convulsions, etc. Removal is simple and effects a cure. In a goodly proportion of cases the adenoids do not recur.

8. Recent excavations in Memphis, Egypt, have brought to light some representations in stone of surgical operations, probably dating back to 2,500 B.C. The interpretation is rather obscure. One operation is evidently opening a boil. Another seems to be a circumcision. A possible interpretation of a third is the breaking of a chordee. [R. I. L.]

ANNALS OF SURGERY.
NOVEMBER, 1907.

1. *PORTER, C. A., AND WHITE, C. J. *Multiple Carcinomata following Chronic X-ray Dermatitis.*

2. Singley, J. D. V. *Phagedenic Ulceration of Both Breasts during the Puerperium.*
3. *Roys, C. K. *Cutaneous Horns.*
4. Barker, M. R. *Traumatic Hematomyelia.*
5. Babcock, W. W. *Nerve Disassociation; a New Method for the Surgical Relief of Certain Painful or Paralytic Affections of Nerve Trunks.*
6. Barr, W. S. *Operations on the Spinal Column.*
7. *DeForest, H. P. *The Surgery of the Thoracic Duct.*
8. Horsley, J. S. *Dermoid Cysts of the Head.*
9. *Dwight, T. *Stylo-hyoid Ossification.*
10. *Bloodgood, J. C. *Acute Dilatation of the Stomach — Gastro-mesenteric Ileus.*
11. Cumston, C. G. *Tuberculosis of the Cecum.*
12. *Van Zwalenburg, C. *Strangulation Resulting from Distention of Hollow Viscera.*
13. Whiteford, C. H. *Abnormal Ileo-appendicular Fold as a Cause of Partial Occlusion of the Bowel.*
14. Knott, V. B. *A New Liver Suture.*
15. Rigby, H. M. *The Operative Treatment of Calculi Impacted in the Pelvic Portion of the Ureter.*

1. Porter's personal experience in the observation and treatment of two cases of malignant skin lesions following exposure of the hands to x-ray significantly emphasizes the danger to members of the profession engaged in x-ray work. The early dermatitis has a marked tendency to lead to local epithelioma, which, in five of the ten cases previously reported in the literature, has been followed by fatal metastasis. Hence the pertinent conclusions as to the necessity of prompt and efficient treatment of such lesions by excision and grafting, or by amputation. There is an instructive pathological report by White, and a valuable description of the technic of skin-grafting, which Porter developed in the course of his study.

3. In connection with the above, it is appropriate to note the liablity of cutaneous horns to epitheliomatous degeneration and the consequent desirability of their radical removal.

7. Accidental injury to the thoracic duct is an occasional complication of deep operations on the left side of the neck. From an examination of the literature, DeForest concludes that this is not so serious a condition as one might fear; death as a result of it is rare, temporary disturbance of nutrition may ensue, function is generally restored through collateral channels. For treatment he recommends suture of the wounded duct, if possible; otherwise, ligation, suture of surrounding tissues, clamping, or tight pack.

9. Dwight presents an interesting anatomic study of ossification of the stylo-hyoid chain. Consideration of the embryology leads him to believe that such ossification is not a degenerative process of age, but the early conversion to bone of persistent fetal cartilage. This belief he illustrates by description of a series of cases, of which three are of his own recent observation. Clinically the condition may interfere with operations on the carotid arteries, the parotid and the tonsil; and it may cause difficulty in swallowing. Diagnosis may be made by bimanual examination and by x-ray.

10. Recent experiments in artificially produced dynamic ileus have called attention to the possible clinical importance of such a condition following operation. Bloodgood reports cases of acute post-operative gastric dilatation, a case of primary acute, and a case of chronic, gastro-mesenteric ileus, — all apparently physiologic in origin. He contrasts these cases with others of acute high mechanical obstruction, and suggests as points in their differential diagnosis that in the latter pain begins earlier and distention later than in dynamic ileus. For treatment of acute gastric dilatation he advises first the stomach tube, with knee-chest or left lateral position; if this fails, later operation; posterior gastro-jejunostomy, when the dilatation ends at the pylorus; gastro-jejunostomy with jejuno-duodenostomy, or the latter alone, when the duodenum is also distended.

12. Another aspect of this subject is illustrated by Van Zwalenburg's attempt to show by experiment how the mere distention of hollow viscera produces circulatory changes which may predispose to infection and inflammation.

[R. M. G.]

The Lancet.
Nov. 9, 1907.

1. *Barr, J. *Abstract of the Bradshaw Lecture on the Pleurae; Pleural Effusion and Its Treatment.*
2. Powell, R. D. *Address on Some of the Advances of Modern Medicine.*
3. Brunton, L. *Introductory Address on Fleas as a National Danger.*
4. Fowler, J. K. *Presidential Address on the Advances in Medicine during the Past Thirty Years.*
5. Shaw, T. C. *A Contribution to the Analysis of the Mental Process in Criminal Acts.*
6. Doran, A. H. G. *Chronic Intestinal Obstruction due to Adhesion of a Uterine Fibroid to the Mesentery.*
7. *Ryall, C. *Cancer Infection and Cancer Recurrence; a Danger to Avoid in Cancer Operations.*
8. Butler, T. H. *Some Cases of Vernal Catarrh.*
9. Lorand, A. *Clinical Observations on the Origin of Fever.*
10. West, C. E. *Four Cases of Tuberculous Disease of the Temporal Bone.*

1. The first part of Barr's article takes up the physiology of respiration, with observations he has made on cases of artificial and acquired pneumothorax. He then speaks of the etiology of pleurisy, agreeing with other observers that the vast majority of pleurisies with effusion are tuberculous; dry pleurisies are less apt to be so. He gives in detail his method of treatment by tapping. He recommends complete withdrawal of the effusion in all cases, except in elderly persons with rigid chest walls, and except early in the disease, when there is still febrile reaction. In these cases, before any great negative pressure is established, and before the patient feels any discomfort, he stops the siphon (which he uses in preference to the aspirator), and introduces a quantity of air equal to the amount of fluid which he has withdrawn; he then re-establishes the siphon and completes the withdrawal of the effusion. When all the fluid is withdrawn he injects 4 cc. of adrenalin solution (1-1000) diluted with 8 or 10 cc. of sterile normal saline solution, and if necessary, introduces more sterile air so as to make the total amount equal to a half or three quarters of the bulk of the fluid withdrawn. In cases which he knows to have pulmonary tuberculosis he introduces more air; there is no discomfort. He avoids routine and makes such modifications in treatment as will suit the individual cases. He advises eliminating salt as much as possible from the diet. He then speaks of the work which has been done by other observers and himself on the question of creating an artificial pneumothorax in treating pulmonary tuberculosis, and last he takes up the treatment of empyema.

7. Ryall presents a series of cases of cancer showing the danger of spreading cancer during operations. His cases include cancer of the breast, of the tongue, lip, larynx, etc., cancer of the rectum and cancer of the abdomen. There are numerous illustrations of recurrences which have taken place in stitch holes and along the scar. He believes that cancer infection during operation is responsible for many of the cases of recurrent nodules in the site of operation wound, and that suture-hole infection is exceedingly common. He thinks that this is a danger that cannot be too carefully guarded against, and that any failure to avoid it has an important bearing on the question of cancer recurrence. [J. B. H.]

British Medical Journal.
Nov. 9, 1907.

1. Barr, J. *The Bradshaw Lecture on the Pleurae; Pleural Effusion and Its Treatment.*
2. Williamson, J. D. *Cerebro-Spinal Meningitis Complicated by Parturition.*
3. Harman, N. B. *Origin of the Facial Nerve.*
4. Gubb, A. S. *Subcutaneous Injections of Air as a Means of Relieving Certain Painful Manifestations.*
5. Hunter, W. *Introduction of Discussion on Pernicious Anemia and Allied Conditions.*
6. Boycott, A. E. *Anemia in Ankylostomiasis.*
7. Minchin, E. A. *Introduction of Discussion on the Hemoflagellates.*
8. Prout, W. T. *Practical Notes on the Treatment of Blackwater Fever.*

9. MOTT, F. W., AND STEWART, H. G. *Some Further Observations on the Cell Changes in Dourine and Sleeping Sickness.*
10. BALFOUR, A. *A Peculiar Blood Condition, Probably Parasitic, in Sudanese Fowls.*
11. CHRISTOPHERS, S. R. *Development of Piroplasma Canis in the Tick.*
12. WILLIAMSON, G. A. *A Further Note on Bilharzia (Schistosomum) Disease in Cyprus.*
13. BIRT, C. *South African Diseases.*
14. BIRT, C. *Mediterranean Fever in South Africa.*
15. BEGG, C. *Complications found in Chronic Cases of Sprue.*
16. DE SILVA, W. H. *The Climate of Ceylon.*
17. CANTLIE, J. *Anatomical Studies of the Rectum and Sigmoid Flexure in Relation to the Causes and Treatment of Mucus in the Stools, Associated with Intestinal Flux.*
18. CANTLIE, J. *One Hundred Cases of Liver Abscess.*

THE PRACTITIONER.
NOVEMBER, 1907.

1. NEWSHOLME, A. *The Lower Limit of Age for School Attendance.*
2. WILSON, T. S. *On the Nature of the Expansion Phase of the Cardiac Cycle and the Phenomena Associated with It.*
3. HOWELL, C. M. H., AND WILSON, H. W. *Movable Kidneys.*
4. *TURTON, E. *The Opsonic Treatment of Pulmonary Tuberculosis by Tuberculin.*
5. MOORE, F. C. *Rectal Feeding — A Review.*
6. RENTON, J. C. *Notes of Surgical Cases.*
7. HENDERSON, T. B. *Some Unusual Abdominal Cases.*
8. LAMBERT, G. *"Weak Hearts" in General Practice.*

4. Turton gives the results of seventeen consecutive cases of pulmonary tuberculosis treated with tuberculin. Almost all of these patients have been able or compelled to carry on their usual occupations during the whole or greater part of the treatment. Such measures as could be used at home were advised. In many cases tuberculin was the only treatment. They were cases of all degrees of severity, from the earliest to old standing chronic and advanced cases. He uses new tuberculin with doses of from 1-4000 mgm. to 1-2000 mgm. at intervals of from four to twenty-one days. His only guide as to the time of injection has been the opsonic index, which he has taken frequently, and has endeavored to maintain at a high level: his results are interesting, in the main going to show that cases taken early in the disease will react very favorably to tuberculin without the aid of sanatorium treatment. The chief cause of failure in those cases which did poorly was that the diagnosis was not made early enough, and the second great cause was that for economic reasons the patient could not be removed from very unfavorable surroundings.

He has endeavored to prepare tuberculin from the particular brand of tubercle bacilli found in the individual patient. At present this is too long and expensive a process to be of general use. In many cases pneumococcus vaccine in addition to the tuberculin has been of value, and he believes that injection with the vaccines of the mixed organisms in addition to tuberculin will in the future in many cases bring better results. Whether the results in his cases are better than what could be accomplished by a more vigorous campaign against poor home-surroundings, is doubtful. His results, however, are certainly of interest, and his paper deserves careful study.

[J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 39.
SEPT. 26, 1907.

1. *CHANTEMESSE, A. *Ophthalmo-Diagnosis of Typhoid Fever.*
2. *FINKLER, D. *Bacteriological Predisposition and Virulence.*
3. *PFEIFFER, R., AND FRIEDBERGER, E. *Investigations of the Respiratory and Digestive Organs as a Source of Tubercular Infection.*
4. LOEFFLER, F. *Differential Diagnosis of Typhoid Bacilli by Means of Malachite-Green Culture Medium.*
5. *KOSSEL, H. *Spread of Typhoid by Bacilli Carriers.*
6. *WASSERMANN, A. *Recent Experiences with Antiserum Treatment of Epidemic Cerebrospinal Meningitis.*
7. *HEIM, L. *Pneumococcus Studies.*
8. GRUBER, M., AND FUTAKI, K. *Contribution on the Resistance to Anthrax.*
9. UHLENHUTH, HOFFMANN E., AND WEIDANZ, O. *Preventive Action of Atoxyl in Syphilis of Monkeys and Rabbits.*
10. KOLLE, W. *Some Practical and Theoretical Points in Disinfection.*
11. HUEPPE, F. *Human and Cow's Milk in Infant Feeding.*

[This issue is dedicated to the International Congress of Hygiene and Demography, and all the articles are by men who are leaders in preventive medicine.]

1. Chantemesse describes a method of obtaining an ocular reaction to typhoid toxin somewhat similar to the ophthalmo-tuberculin reaction. To prepare the necessary reagent, typhoid cultures are sterilized at 60° C., the bodies of the bacilli dried *in vacuo*, and triturated for several hours in an agate mortar. The watery extract of the resulting powder is heated to 60° C., and the clear liquid is poured into an excess of absolute alcohol. The resulting precipitate is dried *in vacuo*, and to perform the test 8 to 10 mg. of powder so obtained is dissolved in 1 cm. of water. One drop of this fluid is placed in the lower conjunctival sac of the patient, and it the case is one of typhoid infection a local reaction appears in a few hours, characterized by redness, burning, lacrymation and a small amount of fibrinous exudate. The intensity of the reaction is subject to the individual idiosyncrasies of the patient and to the amount of toxin applied. In persons not suffering from typhoid little or no reaction follows, whereas, if the disease is present, local symptoms are very pronounced, and, what is especially characteristic, persist for one to three days. The author states that in over 200 applications no unpleasant symptoms resulted. In testing 50 non-typhoid patients, no positive results were obtained, whereas, in 70 cases of known typhoid all were positive. In a number of instances the ocular reaction was obtained at an earlier stage of the disease than the agglutination test.

2. Finkler reviews the facts composing our knowledge of immunity, and shows how they all tend to prove varying predispositions to disease in different individuals. The bacteria also show varying degrees of virulence. Predisposition and virulence react upon each other, and must be considered together, never alone, in any discussion of the varying gradations in immunity or in the severity of disease.

3. Pfeiffer's experiments with guinea pigs confirm Flügge's conclusions that inhalation is the main source of tubercular infection, and that the intestinal tract plays only a slight rôle in the etiology of pulmonary troubles.

5. Kossel says that it has been found that not only do persons who have once suffered from typhoid sometimes continue for a very long time to throw off typhoid bacilli in their stools, but even individuals who apparently have never had the disease, but who have been in proximity to a typhoid fever patient, may excrete the organisms in the feces or the urine. This state of affairs may apparently go on for years, so that these individuals for whole decades or even their entire lives may be a source of danger to their environment. The habitat of these organisms in these cases is supposed to be the gall-bladder, which continually reinfects the intestinal contents. Kossel describes in detail several small epidemics of the disease, apparently due to an individual of this sort, who was employed in a dairy supplying milk to the city in which the epidemic in question occurred. This man had worked on the farm for twenty years, and was not aware that he had ever had typhoid fever, yet the bacilli were found repeatedly in his stools. Kossel remarks that in the future it will be necesssary to examine for these bacilli carriers as a further precautionary measure against the contamination of milk.

6. Wassermann reports 102 cases of epidemic cerebro-

spinal meningitis, in which anti-meningococcus serum treatment was used. It had a curative effect when injected early in the disease, and was harmless in all cases. It has no effect after the sub-acute or chronic stages are reached. Doses of 5 to 10 cc. can be repeated two or three times a day. In the severest cases it is injected directly into the spinal canal after withdrawing a little more fluid than is injected. The injections must be kept up after improvement, as relapses are common.

7. Heim says that his former announcement in regard to drying pneumococci on silk threads has not received the attention it deserves. Pneumococci thus dried retain their vitality and virulence for six months at least. The streptococcus mucosus, typhoid bacilli from agar cultures, and diphtheria bacilli dried on threads also retain their vitality a long while. He has kept typhoid and diphtheria bacilli for two years and the tetragenus for five years, with all their properties unimpaired.

[L. G. M.]

Münchener Medizinische Wochenschrift. No. 39. Sept. 24, 1907.

1. Quincke, H. *Ventilation of the Upper Air of Rooms.*
2. *Weichardt, W. *Studies on Split Albumin Antigen of Toxic Character (Kenotoxin) and Its Antibody, etc.*
3. Kämmerer, H. *Opsonins and Phagocytosis in General.*
4. Bechold, H. *The Electrical Charge of Toxin and Antitoxin.*
5. Lang, H. K. *The Presence of Oxygen-Free Drinking Water in Springs.*
6. *Kownatzki. *The Mode of Spread of Infection in Pemphigus Neonatorum.*
7. *Abe, N. *Recognition of Typhoid Bacilli in the Lice found on Typhoid Patients.*
8. *Beltmann. *The Arsenic Treatment in Syphilis.*
9. Beer, A. *The Value of the "Dark Field" Microscope in the Clinical Diagnosis of Syphilis.*
10. Treumpel, G. *The Treatment of Acute and Chronic Rheumatic and Gonorrheal Joint Affections.*
11. Jacobi, E. *A Rubbing Apparatus for Applying Mercurial Ointment.*
12. Stadelmann, E. *A Case of Creosotal Poisoning.*
13. Prior, A. *A Case of Bismuth Poisoning.*
14. Riebold, G. *The Ovulation Period and Its Relation to Menstruation and to Disease.* (Concluded.)
15. Beschorner, H. *The Placing of Stations for the Care of Tuberculosis, and Their Importance in Combating Tuberculosis as a Disease of the People.* (Concluded.)

2. The author finds a certain substance, which can be split from albumins, which is not chemically definable, and can be separated from the chemically definable products by dialysis. He calls this a "split albumin antigen," or "kenotoxin." Criminals treated with small doses of this toxin developed an antibody specific to it. Mice injected with kenotoxin show marked symptoms, — sleepiness, slowing of the respiration and subnormal temperature. Animals immunized with doses of serum containing the antibody exhibit no symptoms. The same kenotoxin has been found by the author in the breath of animals and man, and also in the fluid taken from an edematous extremity in venous stasis of the part, also in the urine. The author also finds that in certain cases kenotoxin acts as stimulant to the activity of body cells. He claims this is the first time that a specific antibody to a well-marked toxin, not connected with a living organism, has been artificially produced. [*Cf.* Vaughan's work on a toxic substance split off from egg-white.]

6. The benign pemphigus neonatorum, a disease of the fourth to ninth day of life, is, according to Kownatzki, a strictly contagious one, probably due to the staphylococcus, which is usually found in the contents of the bullæ. The disease is spread from one child to another by the nurses, or by some utensil, linen, etc. The author has traced several epidemics from child to child in this manner, and found that after making the nurses wash with special care after handling an infected infant, and sterilizing all linen, bedding, etc., the epidemics came to an end.

7. Abe has examined lice found on typhoid patients. He collected the insects in a sterile tube, immersed them in .1% corrosive solution, then, after rapid and thorough washing, he made an emulsion, with which he inoculated tubes and plates. In each case he was able to demonstrate typhoid bacilli. He concludes that lice may be a factor in the spread of typhoid.

8. Bettmann has, in earlier days, used the older forms of arsenic in the treatment of syphilis. In the ordinary case, he has not seen any evidence that it had an actual effect on the general disease; in gland swellings, in very anemic patients, and on certain types of skin eruption it has worked well. There seems to be an increased tendency to syphilitic angina, to mucous patches, and to moist papules about the genitalia and anus. The author has seen three cases of malignant syphilis, in which mercury was of no avail, clear up under arsenic. Of late he has seen two such cases clear up under atoxyl. There was, however, a return of severe secondary conditions, which did well under mercury. He does not see that atoxyl is any more efficacious than the older forms of arsenic, and points out that it must be used with great care, as it is by no means a non-toxic drug.

Berliner Klinische Wochenschrift. No. 39. Sept. 30, 1907.

1. Virchow, H. *Kyphosis of the Vertebral Column.* (Continued article.)
2. *Bashford, E. F., Murray, J. A., and Haaland, M. *Results of Experiments on the Nature of Carcinoma.*
3. *Diesselhorst, G. *Excretion of Mercury in Syphilis.*
4. Wilamowski, B. J. *Hyperesthesia of the Skin in Diseases of the Internal Organs.*
5. *Hasselbalch, K. A., and Jacobäus, H. *The Treatment of Angina Pectoris with Light Baths.*
6. Vogel, J. *Anuria.*

2. The authors report a series of observations on carcinoma in the mouse. A carcinoma of the mammary gland of a mouse was transplanted successfully, and on examination of the transplanted tumor, a mixed condition was discovered. Among the cancer cells, definite masses of spindle-celled sarcoma had developed. Bits of this tumor, when transplanted to an animal immune to carcinoma, developed into a pure spindle-celled sarcoma, which in turn was successfully transplanted to another animal. Whether this sarcoma existed along with the carcinoma in the first mouse, or whether it was of later development, the authors are not prepared to state.

3. The method used by Diesselhorst for quantitation of mercury in the urine and other excreta depends on electrolysis. He describes his procedure at length. He finds that mercury appears in the urine five days after the beginning of the use of the ointment, and that, after a long course of mercurial treatment, it is present in the urine sometimes for many months. Late in the treatment more mercury is excreted in the feces than in the urine. Slight traces are recognizable in the sweat. After subcutaneous injections of mercury much greater amounts appear in the urine than with enunction, or when mercury is administered by mouth.

5. Observations on the effects which hyperemia of the skin resulting from light treatment had on blood pressure and respiration, led the authors to institute a series of researches on the effect of light baths in angina pectoris. In 26 cases so treated, it was found, after ten baths with a pause of five days between each bath, that a permenent hyperemia of the skin resulted. This means that there is more blood at the surface, less blood in the internal organs, the blood pressure is lowered, and the respirations are easier and deeper. The betterment of symptoms in the 26 cases was marked in many, and evident in all but one. [R. D.]

Revue de Chirurgie. September, 1907.

1. *Terrier, F., and Lecène, P. *The Semilunar Line of Spigelius.*
2. *Couteaud. *Trauma of the Gall-Bladder.*
3. Estor, E. *Congenital Subluxation of the Wrist.* (Concluded.)
4. Pichon, R. *Muscle Herniæ, Particularly Those Due to Simple Rupture of the Aponeurosis.* (Concluded.)

1. The writers point out the historic and anatomic inaccuracy of the term "semilunar line of Spigelius," as applied to the line of origin of lateral ventral herniæ, and recommend its abolition. They consider the true determining factor of the site of such herniæ to be the points of exit of vessels and nerves through the aponeurosis at the outer margin of the recti.

2. Direct trauma to the gall-bladder is of rare occurrence, and generally due to gunshot or stab-wounds. Couteaud reports a personal case and collects others from the literature. The mortality is large and dependent rather on the ensuing peritonitis than on shock, which is relatively slight. [R. M. G.]

The Existence of Vasomotor Nerves in the Brain. O. MÜLLER and SEEBACH (Zeitschr. für Exp. Path. und Ther., Bd. 4, Heft 1, p. 57) report important experimental work which proves that the brain, like other organs, is supplied with a system of vasomotor nerves, which govern its blood supply, independently of general variations in the arterial and venous pressure. The existence of vasomotors in the brain has been denied by the most recent observers, notably by Leonard Hill and Roy and Sherrington. These authors ascribe the increase of volume of the brain noted after cutting the sympathetic in the neck to a passive dilatation of the cerebral vessels, secondary to increased blood pressure. Müller and Seebach show that this is not the case, for the increase in volume takes place before the blood pressure begins to rise. In a long series of experiments they prove in various ways that contraction and dilatation of the cerebral vessels take place independently of changes in the general blood pressure. For instance, after the administration of chloroform, the general arterial pressure falls, while the volume of the brain increases; after small doses of strychnia, on the other hand, the blood pressure rises and the cerebral volume diminishes. Again, after a cold bath, with a rise in the general arterial pressure, there is marked increase in the brain's volume, due to dilatation of the vessels, while the vessels of the face are contracted. The success of the authors is to be ascribed to the excellent methods employed, which included the use of a very delicate plethysmograph to measure the changes in volume of the brain, the measurement of the rate of venous outflow of a cerebral vein at the place where it comes out from the skull, and separate weighing of the head. This last method was devised by Müller, and shows with great delicacy changes in the weight of the head, due to alterations in the blood pressure. Numerous excellent tracings illustrate the work. [W. T.]

COURMONT, M.P. (*La Semaine Médicale*, Oct. 23, 1907), in 57 cases of suspected tuberculous joint disease has obtained positive results in 80% by means of a sero-diagnostic reaction on a principle similar to that of the Widal reaction for typhoid. A few drops of serous fluid aspirated from the suspected joint are added to an emulsion of tubercle bacilli, which are precipitated or thrown into clumps by a positive serum. He has never obtained a positive reaction in joint disease other than tuberculosis.

Correspondence.

LETTER FROM PARIS.

[*From our Special Correspondent.*]

ELECTRIC SLEEP.

PARIS, NOV. 19, 1907.

Mr. Editor: For a long while past I have been trying to bring myself up to the point of writing a letter on the question of electricity in medicine; but each time that I have sat down to meditate on the subject, I have ended in the frame of mind of the man who, when he reached the top of a steep hill, found that his entire load of apples had run out of a hole in the back of his cart. A passerby, seeing him sitting mutely by the wayside, inquired why he didn't say something. To which he replied: "Stranger, I feel I can't do the subject justice."

I have little knowledge as to the status of the electric fraternity at home, so of them I do not propose to speak. In England this branch is evidently in its infancy, the Englishman being apparently less vulnerable to quackery than other people. A German writer recently remarked, in plaintive tones, that the reason why all electric treatments are so fashionable in France and give results there which cannot be obtained elsewhere, is that the French are more "suggestionable." But the truth is that here the very term "electric specialist" stinks to heaven.

Far be it from me to condemn the entire corporation; that would be absurd on the face of it. For in this dough of medical degradation there is a solid leaven of honest men. But a large element of these — lightning-jerkers, let us call them—are the most monumental charlatans that one could well find. And of all the charlatans, *I* ever met, the electric gentleman is the cleverest, — A, No. 1, gilt-edged.

For a number of years, now, the position of the medical practitioner here has been steadily growing more difficult. An English writer put the case very neatly, recently, when he bewailed that there was "no longer enough acute disease to go round!" And I hear that in England also the medical barometer is not at *beau-fixe*, either. When I look back some distance, as I unfortunately can, and think what a general practice was here once, and where it stands now (particularly as regards the occurrence of zymotic disorders), the difference is enormous. I can recall a ward I was in as a student at St. Antoine hospital, and another at the Pitié, in which nearly every bed contained an enteric case, certainly three quarters of the beds of a general service; but two weeks ago the health bulletin of the city of Paris (2,500,000 circa) mentioned 33 cases reported to the authorities during the previous week, with no deaths, something unprecedented. This is for enteric only; but matters are very similar as regards the other infections, always excluding tuberculosis, naturally.

The result of this has been that a number of men have been driven to the wall; and many of them have taken up the electric battery in self-defence. And as electric treatments happen to be all the fashion at present, they are working the lead for all it is worth, their zeal being, if anything, surpassed by that of the serene dodos who troop to their offices month after month, and season after season, always impressed by the mysterious cage, the whiff of wind, the spark that comes out of the knee, or the capillary erection; always being promised relief in a voice of authority, and always looking for improvement, which somehow or other doesn't materialize. Some witty Frenchman once said that whenever he had doubts as to the existence of infinity, nothing set him up so completely as the contemplation of *la bêtise humaine;* and nowhere in medicine does our poor human nature show to such lamentable disadvantage as among these victims of chronic disorders, pursuing the *feu-follet* of an electric cure.

However, let us not, while speaking of the black sheep of the profession, forget the white ones; and it is to one of these that I wish to refer to-day, Professor Leduc, of Nantes.

Leduc is a man who has recently come into considerable prominence. He has, as I understand it, been able to create artificially something that looks like cellular formation, and that appears to reproduce itself. This claim of his has given rise to much controversial argument. More important has been his work on ion-therapy, the introduction of chemical substances into the tissues of the body by means of electricity; and in this department he is said to have accomplished some remarkable results. But unquestionably his most striking achievement has been his demonstration that animals can be put to sleep by means of electricity, and can be maintained by it in a condition such that any operation can be performed on them that could be done on human beings under the influence of ether or chloroform.

I shall not attempt to describe the electric part of this subject, not being competent to do so in any way; the whole apparatus and method has been published in the fullest detail, and any person specially interested in the question can easily obtain Leduc's paper.[1] But I will pass on at once to the portion that interests the general medical reader.

Leduc takes a rabbit or dog, and applies one electrode to the head and the other to the small of the back, using his special and complicated apparatus, and preparing the

[1] Presse Médicale, Feb. 27, 1907.

animal with great care. He then gradually raises the "potential," somewhat quickly at first, afterwards more and more gradually, keeping a close watch on the animal. Any agent that can do away with the functions of the brain (chloroform, alcohol, opium) first stimulates them; and electricity is not an exception to the rule. But although the period of excitement cannot be avoided, it is possible to extend it over as great a space of time as is desired, by means of the deliberation with which the current's potential, and intensity are raised; now the greater the time taken, the less the degree of stimulation and of its ensuing agitation. The latter stage comes just before inhibition and sleep; this is why it is necessary to proceed more and more slowly as the experiment advances.

By following this method the animal is seen to pass into a state of unconsciousness similar to the sleep of chloroform, peacefully, progressively, without a cry, without a movement of defence or flight, and without a sign of suffering! Excepting the fact that reflex action continues, the animal appears to be absolutely insensible, and any operation indicated can be performed, just as on a patient completely under the influence of chloroform.

When it is desired to bring the experiment to a close, the current is shut off brusquely. The animal then comes to at once, gets on its feet, looks quietly about without sign of fear, fright or fatigue, and, as soon as freed from the electrodes, begins to play and eat as though nothing had happened.

There are no sequelæ, no vomiting, rarely any stupor; the experiment seems to cause no suffering, for not only do the animals manifest no sign of pain, but they remain affectionate, show no resentment against the operators, and no fear or revolt during preparations for further applications, which is remarkable in the dog, who is so unerring in distinguishing between those who are good to him and those who are not.

If, now, during electric sleep, the difference of potential in the circuit is steadily increased still further, a moment comes when the respiration stops, and finally the heart does so also. Leduc pauses to remark how different his method is, how infinitely more humane, than the process employed in America for electrocution. With his method the subject feels nothing, and it is not a metaphor to say that he falls quietly into an everlasting sleep. In America, on the contrary, pain and violent contractions occur before perception is abolished; the tension and potential employed are far too great; there is violent reaction and a setting free of heat, which burns the subject and makes it necessary to interrupt the current at the end of a few seconds only; the victims then sometimes revive, and several successive applications have to be made to produce death. With the intermittent current, applied according to Leduc's method, no more than the very slight intensity necessary to stop the heart is used, and the application can be prolonged so long as desired, without any interruption.

The tolerance of animals for electric sleep is something remarkable; one rabbit was kept under experimentation for four hours fifty minutes, and another for eight hours twenty minutes, without unfortunate consequences. The same animal can be put to sleep a great many times without any ill effects to health.

However, we have still the climax of this affair to relate. Leduc has the courage of his opinions, and not being satisfied with experimentation on animals, looked about for more important material. I imagine that applicants for the experiment were not easy to find, so he was reduced to trying his system *on himself!* That is, he persuaded two of his colleagues of the Nantes Faculty of Medicine to put him to sleep with his apparatus; and it is perhaps difficult to say which of the participants required the greater nerve,— the subject or the operators. This is how he describes the experiment:

"The feeling produced by the stimulation of the superficial nerves is easily borne, though disagreeable; it soon lessens, as in the case with the continued current, and after passing a maximum, decreases in spite of the increase in power. The countenance is red, there are slight contractions of the muscles of the face, neck and forearm, and fibrillary tremulations are observed, followed by tingling of hands and finger-tips. This tingling then occurs in feet and toes. Inhibition first affects the centers of speech, the motor centers are entirely inhibited next, and then the subject is unable to react in face of the most painful stimulation and can no longer communicate with the experimentors. The limbs, although not in complete resolution, show no stiffness. A few mutterings are heard, not caused by any pain, but due apparently to stimulation of the muscles of the larynx. In these experiments the pulse remained altogether unchanged; but breathing seemed a little labored.

"When the maximum current was reached I still heard what was said about me, though as in a dream; I was conscious that I was unable to move or speak to my colleagues; I felt contact, pinching or pricking, but the sensation was dull, as though in a limb deeply numbed. The most disagreeable impression was that of following the dissociation and successive disappearance of the faculties; this feeling is the same as that of a nightmare during which, in presence of some fearful danger, you can neither cry out nor move. Still, I was always sufficiently conscious to be able to regret that my colleagues did not raise the current enough to produce complete inhibition. After this first experiment we began again (! !), intending to go still farther; but this time my colleagues, thinking that inhibition was complete, once more halted before entire abolition of consciousness and suppression of sensation. In these two consecutive experiments I remained twenty minutes under the influence of the electricity. When the current was shut off, I awoke at once; I felt no after-effect whatever, unless it were a feeling of well-being and physical vigor; and immediately subsequently I went and delivered a speech before a society for labor-pensions, of which I am an honorary member."

In reply to a note, M. Leduc has been good enough to write me that this is the only experiment of the kind on record, so far as he knows, and I can well believe him. Perhaps, were a state of tension of such gravity to arise between myself and the powers-that-be that my presence on this globe was felt to be no longer tolerable, I might call on Leduc to lend me his services as an obliging *confrère;* but otherwise I feel that nothing on earth would induce me to have such an experiment tried on me. I always bear in mind the words of wisdom inscribed over the door of a mill in the West: "Visitors are requested, in their own interest, not to monkey with the buzz-saw." There is nothing so ticklish, or so ready to go wrong, as complicated electric apparatus. Some hitch, and a few extra volts through your head would send you to the grave, and the operator to the gallows; and I should hate to do that.

"Spectator."

NOTES ON X-LIGHT. NOTE 203. ON THE USE OF FUSED SILICA IN VACUUM TUBES.

Boston, Thanksgiving Day, 1907.

Mr. Editor: In Note 84, an inexpensive method of making x-light tubes was described and illustrated. As the price of x-light tubes has steadily advanced until now durable tubes cost about fifty dollars, it is desirable to call attention to the method mentioned. Instead of the bulb being blown it was molded in a glasshouse, with end tubes of sufficient diameter to admit the terminals without expansion. All that was necessary to complete the tube was to seal in the terminals and exhaust. The stems of the terminals were supported by disks of mica or lava at first, afterward of glass. Now that fused silica can be obtained, it is recommended for these disks, as it does not crack and gives off little gas. In several later notes the use of radio-active substances in vacuum tubes was recommended for regenerating the tube and for ionizing the gases to make them better conductors. The radio-active materials were used in small glass tubes sealed within the vacuum tubes, a current of electricity being sent through the radio-active material when more gas was desired. As these glass tubes were liable to crack when being sealed in and afterward in use, the employment of quartz tubes, both for the radio-active regenerator and automatic vacuum regulator is here recommended.

Very truly yours,

William Rollins.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 23, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	—	—	Waltham	8	3
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	6	—
Baltimore	—	—	Brookline	6	—
Cleveland	—	—	North Adams	9	3
Buffalo	—	—	Chicopee	6	3
Pittsburg	—	—	Northampton	12	5
Cincinnati	—	—	Medford	3	—
Milwaukee	—	—	Beverly	2	1
Washington	—	—	Leominster	4	—
Providence	—	—	Hyde Park	0	—
Boston	198	40	Melrose	3	0
Worcester	37	6	Newburyport	—	—
Fall River	43	19	Woburn	5	4
Cambridge	20	8	Marlboro	2	0
Lowell	41	14	Westfield	3	—
Lynn	22	4	Peabody	—	—
New Bedford	21	9	Revere	2	—
Springfield	23	4	Attleboro	1	0
Lawrence	27	14	Clinton	6	1
Somerville	24	3	Adams	3	3
Holyoke	18	7	Gardner	—	—
Brockton	12	3	Milford	4	0
Malden	10	2	Watertown	3	0
Chelsea	15	3	Plymouth	—	—
Salem	14	4	Weymouth	—	—
Newton	13	4	Framingham	—	—
Haverhill	10	1	Southbridge	4	1
Fitchburg	10	3	Wakefield	—	—
Everett	7	1	Webster	—	—
Taunton	14	3			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOV. 30, 1907.

G. C. THOMAS, acting assistant surgeon. Appointed acting assistant surgeon from Nov. 20, 1907.

W. H. BUCHER, surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to report to the surgeon-general, Navy Department, for special temporary duty, and thence to the Naval Hospital, New Fort Lyon, Colo.

U. R. WEBB, passed assistant surgeon. Ordered to command the Naval Hospital, San Juan, P. R.

H. C. TAYLOR, passed assistant surgeon. Detached from duty at the Naval Hospital, New York, N. Y., and ordered to the Naval Hospital, New Fort Lyon, Colo.

SOCIETY NOTICE.

THE NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — This Society will meet Thursday, Dec. 12, 7.30 P. M., at Hotel Nottingham. Section of Surgical Gynecology, Dr. Sarah E. Palmer, *Chairman*. Papers: Reports of two cases of Tuberculosis of Kidney and Bladder. Dr. Clara J. Alexander. Report of a case of loculate bladder with proteus infection. Dr. Sarah E. Palmer.

BLANCHE A. DENIG, *Secretary*.

RECENT DEATHS.

DR. THOMAS WILDES, of New York, died on Nov. 28, from cerebral apoplexy. He was sixty-eight years of age and had been for some time in the service of the City Health Department.

DR. JOHN ADAM SCHMITT, of New York, died suddenly on Nov. 26, in the fifty-sixth year of his age. He was graduated from the University of Giessan, Germany, in 1875, and was gynecologist to the Yorkville Hospital.

DR. WILLIAM G. RUSSELL, of Brooklyn, New York, died on Nov. 27. He was a native of New York City, and was graduated from the Long Island College Hospital in 1871. He had practiced in Brooklyn for over thirty years, and at the time of his death was consulting physician to the Williamsburgh Hospital.

DR. WALTER JOHN NORFOLK, a retired physician, died at his home in Plainfield, N. J., on Nov. 25, at the age of fifty-nine years. He was born in Salem, Mass., and was a graduate of the Harvard Medical School.

DR. JOHN M. JULIEN, of Pleasant Valley, Dutchess County, N. Y., died suddenly on Nov. 24, from pulmonary hemorrhage. He was of French descent, his grandfather, John Marius Julien, having served under Napoleon Bonaparte in all his principal campaigns, and he himself was an orderly in the French army during the Franco-Prussian War. He was graduated from the Long Island College Hospital, Brooklyn, in 1880.

BOOKS AND PAMPHLETS RECEIVED.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. VI. Edinburgh and London: William Green & Sons. 1907.

Thirty-eighth Annual Report of the State Board of Health of Massachusetts. Boston. 1907.

Treasury Department. Public Health and Marine-Hospital Service of the United States. Trachoma, Its Character and Effects. By Passed Asst.-Surgeon T. Clark and Passed Asst.-Surgeon J. W. Schereschewsky. Washington. 1907.

Gonorrheal Prostatitis. By J. Bayard Clark, M.D. Reprint.

Laboratory Guide for the Modeling of the Human Bones in Clay. By Vilray Papin Blair, A.M., M.D. St. Louis, Mo.: Co-operative Association of the Medical Department of the Washington University. 1906.

A Text-Book of Practical Gynecology. For Practitioners and Students. By D. Tod Gilliam, M.D. Second revised edition. Illustrated. Philadelphia: F. A. Davis Co. 1907.

Syphilis in Its Medical, Medico-Legal and Sociological Aspects. By A. Ravogli, M.D. Illustrated. New York: The Grafton Press. 1907.

A Text-Book of Physiology. By Isaac Ott, A.M., M.D. Second edition, revised and enlarged. Illustrated. Philadelphia: F. A. Davis Co. 1907.

Hospital Training-School Methods and the Head Nurse. By Charlotte A. Aikens. Philadelphia and London: W. B. Saunders Co. 1907.

Board of Health of the State of New Jersey. Public Health Laws. Trenton. 1907.

Gonococcic Infections, and the Physician's Responsibility. By J. Bayard Clark. Reprint.

Diseases of the Stomach. By Dr. I. Boas. The sole authorized English-American edition from the latest German edition by Albert Bernheim, M.D. Illustrated. Philadelphia: F. A. Davis Co. 1907.

Ophthalmia Neonatorum with Especial Reference to its Causation and Prevention. (The Middlemore Prize Essay of the British Medical Association, 1907.) By Sydney Stephenson, M.B., C.M. London: George Pulman & Sons, Ltd. 1907.

Relations of the Doctor to the Alcoholic Problem. By T. D. Crothers, M.D. Reprint.

Diseases of Infancy and Childhood, Their Dietetic, Hygienic and Medical Treatment. A Textbook designed for Practitioners and Students in Medicine. By Louis Fischer, M.D. Illustrated. Philadelphia: F. A. Davis Co. 1907.

The Reduction of Cancer. By the Hon. Rollo Russell, London, New York, Bombay and Calcutta: Longmans, Green & Co. 1907.

The Treatment of Recent Trachoma. By Thomas A. Woodruff, M.D., C.M. Reprint.

The Physician's Visiting List (Lindsay & Blakiston's) for 1908. Fifty-seventh Year of its Publication. Philadelphia: P. Blakiston's Son & Co.

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Original Articles.

VERRUCÆ PLANTARES; THEIR PREVALENCE IN BOYS AND IN YOUNG MEN, AND THEIR PATHOLOGY.*

BY JOHN T. BOWEN, M.D., BOSTON,
Edward Wigglesworth Professor of Dermatology, Harvard University.

THE first to call attention to these plantar warts was W. Dubreuilh.[1] Up to that time the affection had not been referred to in the treatises on surgery or dermatology, although, as he states, it is far from uncommon. His description is so good that it may very properly be quoted:

"When the plantar wart is of recent date, it shows itself in the form of a slightly reddened elevation covered with a thin epidermis. When this covering is removed, bleeding appears from a number of orifices.

"Most often, however, the lesion presents at first sight the aspect of a large and extremely tender callus. The horny layer is thickened and elevated; sometimes the central part of this horny plaque is perforated by a sort of well, more or less deep, especially if there has been an attempt to scrape it off. If, however, the lesion has not been molested for some time, the superficial horny layer forms a complete covering.

"When the surface of the lesion is cut with a knife, the periphery of the lesion is found to have a hard, semi-transparent, horny layer, much like normal horny epidermis, or that which constitutes calluses and corns. Instead, however, of penetrating deeply into the corium with a horny mass as does the corn, this lesion possesses a soft and depressible central portion. It takes the form of a ring perforated by an orifice which becomes larger as one goes more deeply. This central part possesses a tissue of a very different appearance, a horny tissue, to be sure, but white, opaque and milky; it is soft and resistant to the knife like wet tow.

"While the horny ring at the periphery is homogeneous or stratified, the central part appears to be fasciculated and formed of columns which penetrate vertically downwards. Frequently a dark, hemorrhagic point is seen, and most often, if one continues to cut successive layers of the lesion, drops of blood are poured out from a large number of capillary openings which dot the surface.

"It is at first difficult to make a curette penetrate into this soft and tenacious tissue. When once, however, the curette has reached its base, a soft, white, milky tissue is removed, which is divided into columns that run perpendicularly from the surface to the base."

Such is Dubreuilh's description of this affection upon the soles of the feet. With regard to its frequency, I have been much impressed by the large number of cases seen and heard of in and about Boston. Almost all of the cases are in young people, and the affection is especially prevalent in preparatory schools and colleges. Dr. Bailey, the medical visitor of Harvard University, writes me that he sees a large number of these cases every year, and that they average about twenty operations a year for plantar warts at the Stillman Infirmary, the hospital of the University. A great many cases occur, also, in the preparatory schools at Groton and Southborough. I have been unable to collect exact statistics on this point, as they were treated by different people, and sometimes I heard of cases which had not been treated; as, for instance, a boy who was my patient told me that perhaps half a dozen other boys of his acquaintance had similar lesions.

I have been able, however, to study thirty-four cases, which I have seen and treated in my private practice, and of which I have preserved notes. In hospital practice the affection is far less common. We see it so rarely, that statistics from this source would be of little value. Of these 34 cases, 28 were males and 6 were females. The youngest was ten and the oldest sixty. Seven were under sixteen, 15 were between sixteen and twenty, 7 between twenty and twenty-five, and 5 between twenty-five and sixty. It is seen, therefore, that youths and boys under twenty years of age are the ones by far most frequently affected.

Twenty of these 34 cases were in boys who were attending either a preparatory boarding school or Harvard College. In almost all instances the boys would speak of some other boy or boys of their acquaintance who had the same affection, so that the conclusion is justified that in this vicinity, at least, the affection is far more common among boys and youths who are collected in schools and colleges than among other people. Its prevalence in this class is further corroborated by the local physicans in the neighborhood of these institutions.

Dubreuilh considers that local traumatism plays an important part in the development of these lesions. In the cases that I have studied, it was impossible to decide that in any of the cases there had been a local injury. He also thinks that the localization of these lesions is in favor of the traumatic theory, in that they are especially common over the head of the third metatarsal bone. In my cases this localization was not so apparent, although it did occur in a number of instances. Contrary to Dubreuilh's experience, I have seen a number of times the coincidence of plantar warts with a like affection of the palms of the hands, and I have had two cases where they appeared on the palms alone. In one or two cases there had been a palmar wart preceding the attack of plantar warts.

As to the number of these warts, they may be few or many. In one of my cases there were as many as thirty. In two of my cases two members of the same family were affected either at the same time or at a short interval from one another. In one case it was two brothers aged respectively fifteen and twenty-one, and in the other, two sisters of whom the oldest was twenty. It must be admitted that the evidence here stated does not warrant the conclusion that these lesions are contagious, and yet there is enough to make

* Read by title at the Sixth International Dermatological Congress, New York, September 1907.

[1] Ann. de Derm. et Syph., Tome 6, 1895.

such a theory probable. It is quite true that people most subject to these plantar warts are those who are most accustomed to exercise, such as running and tennis playing, and that in these sports an opportunity for irritation of the plantar surfaces is plainly offered. On the other hand, this traumatism can be invoked as offering an opportunity for infection in such cases, and the well-known contagiousness of verrucæ vulgares would be a point in support of this theory.

CASE I. Boy of eighteen. Verruca of the sole of the foot, just below the third metatarsal.

CASE II. Boy of sixteen, who lived at home and attended a day school. He had a verruca of the sole of the foot, which had lasted several months. He said that two years previously he had had a similar lesion on the palm.

CASE III. A boy of fourteen, at a day school. Lesion is situated upon the heel.

CASE IV. A lad of eighteen, who presented three large lesions on each sole, opposite the end of the third metatarsals.

CASE V. Girl of sixteen, who presented a lesion on the ball of the foot.

CASE VI. A youth of nineteen, in college, who presented several lesions on the soles of each foot, the exact number not stated in the record.

CASE VII. A man of twenty-six, one large extensive lesion of the flexor aspect of the thumb.

CASE VIII. Boy of ten, a lesion on the sole of each foot over the metatarsal ending, of six months' duration.

CASE IX. A youth of twenty, who had had multiple verrucæ of the soles of the feet for six months.

CASE X. Youth of eighteen, who had two verrucæ of the soles, besides a large callus.

CASE XI. Young man of twenty-one, who had several lesions at the base of the toes.

CASE XII. Girl of fifteen, with a lesion of the palm of the hand.

CASE XIII. Boy of fourteen, at a boarding school, a verruca of the sole.

CASE XIV. Youth of twenty, a verruca of the heel.

CASE XV. Young man of twenty-one, in college, who had had verrucæ of the ball of the foot for two years, beginning while he was at boarding school, while he was exercising in the fives court. He also had had one of the palm of the hand, which had disappeared.

CASE XVI. Boy under sixteen, at boarding school, who presented verrucæ of the heel.

CASE XVII. Young man of twenty-one, at college, who presented six or eight lesions of the ball of the left foot, which first appeared two years ago, when he was not exercising very much.

CASE XVIII. Young man of nineteen, at college, a verruca of the sole, which had lasted for six or eight months.

CASE XIX. This was a boy of fifteen, at boarding school, a brother of case No. XV, who had a wart of the palm of the hand of three months' duration. This lesion had once been excised by a local physican and had recurred in the cicatrix.

CASE XX. Young man of twenty-one, who had had verrucæ of the sole of the foot for a month.

CASE XXI. Young woman of twenty, who had had, for nearly a year, a plantar wart on the left foot over the third metatarsal. This appeared at the time that she was visited by her sister, who had a similar one. She slept in the same room with this sister, but not in the same bed. Both played tennis, but, so far as could be remembered, had never worn each other's shoes.

CASE XXII. A man of fifty-three, a merchant, who presented a plantar wart over the first metatarsal bone.

CASE XXIII. A young man of twenty-two, in Cambridge, an oarsman, who rowed in the University boat, presented quite extensive lesions of the palms, and also of the sides and backs of the hands. Those of the palms were typical palmar warts. Those of the backs of the hands presented the aspect of ordinary seed warts. There may have been twenty of these lesions altogether. The affection had lasted for three years.

CASE XXIV. Young man of sixteen, living at home, who showed eight or ten plantar warts, chiefly over the metatarsal bones.

CASE XXV. A young man, over twenty. A palmar wart of identical histological appearance with the plantar wart. Also a wart under the nail.

CASE XXVI. Man of fifty, who had had a plantar wart on the sole of the right foot for nine months. It had appeared immediately after a trip to Mexico.

CASE XXVII. Woman of sixty, who presented a half-dozen plantar warts over the metatarsal region.

CASE XXVIII. Young man of twenty-one, who had had a verruca of the sole of the foot, in the metatarsal region, for six months.

CASE XXIX. Young woman of eighteen, who had a palmar wart on the middle finger of the right hand.

CASE XXX. Boy of sixteen, at boarding-school. This was the most extensive case I have seen. Thirty plantar warts, scattered over the whole surface of the sole of the left foot, were counted at one time. There were also some on the plantar surface of the toes. They had first made their appearance six months before. Besides these there were two typical lesions of the palms, which had appeared after those on the soles.

CASE XXXI. Woman of thirty, who had a palmar wart, associated with the ordinary verruca vulgaris of the back of the finger.

CASE XXXII. Boy of fourteen, at boarding school, who had had for six months several plantar warts in a clump on the plantar side of the great toe.

CASE XXXIII. Young man of twenty-one, who had four or five plantar warts in the metatarsal region, of eight months' duration.

CASE XXXIV. Boy of fourteen, at boarding school, plantar wart of the heel.

Melchior-Robert, in the *Annales de Derm. et de Syph.*, 1897, describes four cases, two palmar and two plantar, but without histological examination. He gives the name *verrue en puits* to that form that projects from the surface, but in which the papillary prolongations are deeply seated, and this is the type of both the plantar and palmar warts that I have examined.

D. W. Montgomery read a paper at the fifty-fourth annual session of the American Medical Association on "Papilloma of the Sole," in which he relates 7 cases which he has seen and treated. Four of these were in people under twenty. He refers to the well-like aperture that is uncovered when the outer horny layer is wanting or is removed by cutting.

At the meeting of the Dermatological Society of Great Britain and Ireland, on March 25, 1896,[2] Dr. Eddowes read a paper entitled "Warts on the Feet." Having previously been interested in this subject, he agrees entirely with Dubreuilh as to the clinical appearances of these growths, but had made no microscopical examinations.

[2] Brit. Jour. of Derm., May, 1896.

He considers that traumatism plays a prominent part in the production of these lesions.

The pathology of these lesions has been very thoroughly worked out by Dubreuilh, and with almost everything he says I can concur. I have examined microscopically more than twenty different cases of plantar and palmar warts, and in some instances several lesions from the same case were studied. In connection with these investigations a number of specimens of verrucæ of different histological appearance were also examined.

In the following description of the histological appearances I am, to a great extent, in accord with the very excellent description of Dubreuilh. In verrucous growths, which are not subject to habitual pressure, as on the back of the hand, the tumor is developed as a projection above the surface of the skin. In places, however, where there is a long continued and strong pressure, the wart does not project to any extent, but burrows, as it were, into the cutis, while the adjacent epidermis becomes hypertrophied. A section through the center of one of these palmar or plantar warts explains the characteristics obtained by curetting, for the wart is, as it were, subcutaneous and the similarity to a well is very striking.

There are no important changes in the cutis. The papillæ contain a certain number of cellular elements. I have not found the elastic fibres in the upper portion of the papillæ wanting as has Dubreuilh. In most of the lesions that I have examined, the papillary projections and interpapillary prolongations were much flattened out at the center, whereas I have in all cases noticed the lengthening out of these structures at the periphery of the lesion. In some instances they run almost horizontally to the surface at the periphery.

As regards the epidermis, an interesting feature, peculiar in my experience to these plantar and palmar warts, has been described by Dubreuilh. I have found it constantly in verrucæ of the palm and sole, never in other situations, while Dubreuilh describes it as occurring in a wart on the back of the hand. This change gives rise, in the center of a large and well-developed palmar or plantar wart, to a most extraordinary peculiarity.

Serial sections through an entire lesion show at the periphery the appearances in general of an ordinary verruca, a pronounced acanthosis, papillary enlargement, and down growth of the rete plugs, together with a very pronounced hyperkeratosis. The granular layer is much increased in thickness. Very soon, advancing toward the center of the lesion, the peculiar change described by Dubreuilh is encountered. This consists in a vacuolation of some of the rete cells, which causes them to assume a rounded form and a larger size than the neighboring cells. The lower basal cells I have never seen thus affected, but the appearances may often be seen in the layers near the basal cells. Oftentimes small clumps of rete cells are thus affected while the cells above them still retain their normal characteristics. Usually, in connection with this vacuolation, there is a precocious development of keratohyaline, which often is heaped up at the periphery of the cell around the central cavity. These cells retain their nucleus, which, as a rule, is very much swollen. Advancing toward the center of the lesion, this vacuolation affects more and more cells, which fuse together until at the center of a well-developed lesion, the portion corresponding to the rete is composed of a reticulated tissue heaped up with masses and blocks of kerato-hyaline.

The largest portion of the lesion is composed of the horny layer, which lies, much hypertrophied, over the reticulated rete as just described. That this layer is imperfectly keratinized is shown by the presence in places of the cellular elements, which take the stain of the ordinary reagents.

In one of the first of these lesions that I examined, peculiar bodies were found in many of the nuclei of the rete cells. The appearances at first sight were so striking that the suspicion that they might be some form of protozoa was aroused, and it was on this account that I examined, histologically, so many cases. These bodies were found in a majority of all the cases, not, however, in all. They are small, usually round bodies, highly refracting, occasionally appearing as if concave in the center, and, in a few instances, crescent shaped. As a rule, they are all of equal size. They are first seen in the third or fourth row of rete cells and seem to go hand in hand with the vacuolation, as they disappear when what corresponds to the granular layer is reached. They are not seen in all the nuclei, but are most prominent in the enlarged and swollen nuclei, which accompany the vacuolation. They are stained by the acid reagents, and are sharply differentiated in this way from the rest of the nucleus. No further data as to the significance and origin of these nuclear bodies could be obtained, and, so far as I know, such appearances have never been described in epithelial structures. It was, as I say, natural at first to think of the possibility of their being some form of protozoa, and it is difficult to rule out such a possibility. On the other hand, their appearance in connection with the vacuolation, and their disappearance in the upper layers, would make it more probable that they represent some form of nuclear degeneration or alteration.

TREATMENT.

I have had experience with quite a number of different modes of treatment in this affection. In many instances it was not possible, on account of the prejudice of the patients or their parents, to institute as radical methods of treatment as seemed advisable. In a considerable number of cases salicylic acid in collodion in 10% strength was sufficient, after some time, to remove the lesions. It was painted on daily, and the foot soaked every other day for twenty minutes in hot

water, and then pumice soap used to remove as much of the lesion as possible, and then the painting renewed; much the same treatment that is used in the case of corns.

Many cases, however, will not respond to this treatment, and I have had some success with chrysarobin, which was added, in 10% strength, to the salicylated collodion. In other cases success was attained by covering the lesions constantly with a 60% salicylated gutta percha plaster. It is my impression that almost all of these lesions will yield to this treatment, if it is persisted in long enough, but it may take many weeks, and the necessary patience has not been found in all persons.

Dubreuilh considers curetting the most radical and rapid treatment, which he performs under cocaine anesthesia. The late Dr. Warren, of Groton, who had treated a large number of these cases in the boys of Groton School, wrote to me that he had formerly excised these lesions, but had given it up; that he had tried salicylic acid, corrosive sublimate, chromic acid, nitric and lactic acids; he had also used electrolysis, but had come to the conclusion that the Paquelin cautery was the best, surest and quickest method. He first cocainized the wart, and with the round point of the Paquelin cautery thoroughly cauterized, beginning at the center and sweeping round the whole periphery of the wart. This method he considered almost painless, produced the smallest possible scar, and needed but one sitting, if carefully done. With regard to excision, it has to be thoroughly done, and is practiced with success at the Stillman Infirmary in Cambridge, where, as I have said, they average twenty operations a year for this affection. Even, however, when apparently thoroughly done, the lesion may reappear in the cicatrix, as I have myself seen.

Electrolysis has been effective in my hands, but without thorough local anesthesia it is very painful, and the same may be said of the strong caustics, which I have repeatedly tried. By the advice of other practitioners, a number of the patients whom I have seen have been wearing plates in order to remove the weight from the part affected by the wart. I have rarely seen a cure produced by this mode of treatment alone.

THE CORRECTION OF MALOCCLUSION AND ITS RELATION TO RHINOLOGY.*

BY ALFRED P. ROGERS, D.D.S., BOSTON.

IN undertaking this study of malocclusion it will not be my purpose to carry you through a mass of detail; but to present to you as clearly and briefly as possible the fundamental principles of the practice of orthodontia, laying special stress upon those ideas which we believe are of vital interest and practical value to the rhinologist. That malocclusion of the teeth is sometimes directly responsible for the maldevelopment of the facial bones, and that various pathological conditions of the nasal or post-nasal space are responsible for retarded development of the facial bones, and malocclusion of the teeth, needs scarcely any emphasis. It is undoubtedly true that there are numerous features attending these conditions, which we must work out together in order that we may become more efficient in our practice, and more valuable to those it is our privilege to serve. It is with this idea in mind that I present to you this study, hoping it may in a measure assist in a clearer understanding of the work being undertaken by the orthodontist, and of pointing out its practical value to the rhinologist when he is considering those cases where lack of development hampers him in the attainment of the greater good. While for many years the correction of irregular teeth was regarded for its esthetic value alone, later development in the field of orthodontia has established the fact, that the correction of malocclusion is far-reaching in its beneficent results; that although the esthetic value cannot be overestimated, the other features are of such immense value and importance as to create a new profession, composed of men whose consciences have been so awakened to the immense necessity for their work, that they are compelled to devote their entire time and energy to its accomplishment.

It has long been observed that certain facial and dental inharmonies accompanied nasal stenosis, and are great in proportion to the degree and duration of the nasal obstruction. It is in this particular field that the orthodontist seems to be of greatest value to the rhinologist, because it is his mission to stimulate growth, to restore harmony between the distorted dental arches, to influence the development to such a degree that nasal respiration is more easily accomplished, as well as to change inharmonious facial lines to those of grace and beauty.

We have all seen and known too much of the struggles of childhood, due to faulty respiration, to depreciate even the humblest efforts at its correction; or the endeavor to dispel the harmful and far-reaching results in development which are known to affect not only the face and nasal cavity but the mouth, the pharynx, the thoracic walls and, indeed, the entire system. Although oral respiration is usually confined to childhood, its effects are known to have a greater or less disastrous effect throughout life. The greatest period of suffering is experienced during those years of child life when the facial bones are developing and the teeth are in the process of erupting. The dental arches and the contiguous bony structure seem to be the greatest sufferers. The upper arch and the bones of the middle face are most frequently referred to, by writers on rhinology, as being those which suffer almost exclusively. The lower arch is frequently referred to as being normal in its development; but a close study of malocclusion shows that the lower arch is very frequently malformed; indeed, in very many cases it takes a position distal or mesial to the normal, thus aiding in destroying the facial lines, the type, and even changing the

* Read before the New England Otological and Laryngological Society, March, 1907.

individuality of the subject. The bones of the face are so closely allied that the stimulation of one part readily acts upon another. Therefore, it will be seen that in order to claim the desired advantage, the treatment of these cases must be undertaken very early in life. The removal of spurs, of inferior turbinates, of adenoid growth, seems but a partial remedy. What is mostly needed in these cases is the vigorous co-operation of rhinologist and orthodontist, with a view to a clearer and better understanding of each other's work, and a determined effort to accomplish the desired treatment *before the active period of growth is passed.*

In order to gain an intelligent idea of the correction of malocclusion and its influence upon development, it is necessary for us first to have a clear and definite understanding of occlusion. This picture shows us very beautifully the normal occlusion. (Fig. 1.) It is the basis of all opera-



tions in orthodontia. It is the goal toward which every conscientious operator must direct his efforts. If we examine carefully we shall see that perfect occlusion is incompatible with any degree of irregularity, but that all the teeth with their grooves and inclined planes must be in the greatest harmony, and when this is present, harmony exists not only between the teeth themselves but between the arches, the facial bones, and the overlying muscles. A thoughtful study of this picture cannot fail to convince one of the wonderful influence of these numerous inclined planes in the part they play in influencing, not only the erupting teeth in taking positions of occlusion or malocclusion, but also the arches and facial bones themselves; because a misadjustment of these inclines rarely if ever fails to produce marked malocclusion, whose evil influence does not confine itself to the teeth alone, but to the adjacent tissues as well. Another valuable suggestion which may be received from the study of these inclines is, that these cases are never self-correcting, as many are led to suppose; but must continually grow more desperate and carry the evil effects to a greater and deeper extent. It might be well to emphasize at this point the influence of these inclined planes upon the developing bones. Very serious and far-reaching effects are noticed upon the mandible, where the process of growth may be most seriously handicapped by the adverse influence of these inclines. It is well known to you that the development of this bone in the molar and bicuspid region is from behind forward by a wedging process, when the growth is most active during the eruption of the teeth. If for any reason the inclined planes of the lower molar occlude distal to the normal position, the growth is interfered with. This is exactly what occurs in many cases with the history of continued nasal obstruction, and it is a point well to be considered by the rhinologist and orthodontist. It is well also to bear in mind that the lower arch is of great importance at this period of development, because it is the mould over which the upper arch is swedged. If it takes a position distal to the normal the arch is so shortened that the upper arch must cease to grow, while nature strives to establish as efficient an occlusion as possible. With this endeavor, the growth of the facial bones becomes greatly interfered with, the arches become distorted and narrow and the eruption of certain teeth delayed or entirely prohibited. When this retarded development takes place with the upper central incisors, deflection of the nasal septum may follow. This fact has recently been brought to our attention by Dr. H. P. Mosher, whom I believe has established the fact that a large percentage of tardy eruption of the central incisors has a direct influence upon the nasal septum. We can easily see then how a single misdirected force together with oral respiration may result in the most alarming type of malocclusion which, if left past the age of fourteen or fifteen, will be serious and difficult in treatment, but at the early age of six to twelve, could have been treated with ease, the beneficent influence of the inclined planes reserved, and the development of the facial bones carried on with but little interruption. Before passing on, I wish to point out for diagnostic purposes the relative postion of the first molars. In classifying malocclusion, these points have been found the most reliable for the purpose, as they denote conclusively the mesio-distal relationship of the arches. In the greater number of cases of malocclusion, these molar teeth are in their correct position, but many cases are presented to us in which this condition varies.

In our study of malocclusion and comparison with normal type, we must remember to notice the points of similarity or dissimilarity in the molar regions and between the arches themselves. To make our study more comprehensive, we will imagine that we are examining and comparing with the normal type a few hundred models of malocclusion. Before our search has been long continued, we will not fail to notice that a large number of our models present points of similarity. We will notice that in these cases occlusion of the first molars is exactly as found in normal occlusion. Building upon this point of similarity, we select from our collection all the models bearing this distinction and we have established the great first class of malocclusion. (Fig. 2.) Having satisfied our minds upon the first great class, further search will reveal to us a number of models that differ in a marked degree from the

standard. This time the lower arch seems to be distal to its normal position. (Fig. 3.) Sometimes this occurs on one side and sometimes on both. Another characteristic shows itself in this classification, namely, the protrusion or retrusion



of the anterior teeth. We, therefore, cannot classify without subdivision or subclasses. We will, therefore, divide this second class into two divisions, each division having a subdivision. In the first division, we will place those models



Fig 3

having protruding upper incisors, where the lower arch appears bilaterally distal. The subdivisions of this first division consists of those where we find protruding upper incisors and where the lower arch is unilaterally distal. The second division of this class will be made up of those models having retruding upper incisors and where the lower arch is bilaterally distal; in the subdivision of this class, we will place those models with retruding upper incisors and unilaterally distal arch. This completes the classification of the second class. The remaining few models will present a very marked characteristic which will readily place them in the third class. (Fig. 5.) This time we will notice that the lower

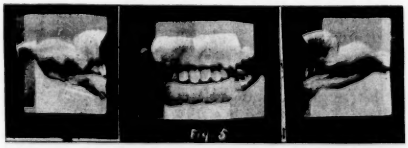


Fig 5

arch is mesial in relation to the upper. Most of these cases are bilaterally distal; these we naturally place in a division by themselves and with the few remaining, we will form the subdivision of the third class. Mouth breathing may be associated with any one of these conditions. Why so many and varied types should result is yet unsolved, but it seems that the period and degree of nasal stenosis must be an important factor.

The diagnosis of impending malocclusion and retarded development of the facial bones may be made at a very early age, sometimes early in the first year. During the first six or seven years of child life ample opportunity for diagnosis of future conditions is given; because it is during these years that those adverse influences are usually at work, and when the bones and teeth are most easily influenced. Nasal obstruction, however, is not the only cause of retarded development. It seems that in order to gain the broadest and most correct ideas we must go further, and look well into the *vital forces of the child.* Dr. Bogue has very clearly emphasized this idea when he says, that "Many of the evils that we, as orthodontists, are called upon to treat, and many of the diseases which confront the rhinologist, arise from a deficiency in the vital force of the child; an inability to overcome some mechanical obstruction. Every developmental process is an expression of vitality. Every defect in conformation or function is an indication of a deficiency in a motor center of power sufficient to overcome obstruction." Another influence which deserves careful consideration is *the lack of use.* If function for any reason is suspended, it is quite true that development is also retarded. Doubtless the average child fails to properly perform the function of mastication, his food is soft and yielding; therefore the lack of proper mechanical stimulation is followed by the inevitable lack of development.

Retarded development is very frequently noticed at the age of six or seven when the arches are so narrow that the eruption of the permanent incisors is seriously interfered with. (Fig. 6.)

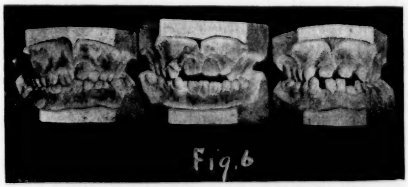


Fig. 6

This condition is directly due to a lack of anterior development, which should have taken place before the loss of the temporary teeth. At this age when normal conditions are present, an enlargement of the anterior segment of both arches takes place. This enlargement is manifest by the



gradual separation of the temporary teeth, when a well-defined space is noticed between each tooth in the anterior segment. (Fig. 7.) When this growth is present and the arches are in correct

mesio-distal relation, normal development may be expected. Should this anterior development be lacking, retarded eruption of the incisors will occur, and, if accompanied by a distal position of the lower arch, the most aggravated form of malocclusion may be expected, with distortion of the dental arches and arrested development of the facial bones and disfigurement of the facial contour. (Figs. 8, 9.) This illustration is that of a



boy six years of age. In spite of the fact that his adenoids were removed very shortly after their discovery, and at the age of two and one-half years, the lack of development in the arches with the distal position of the lower arch forms a well defined case of class two, with the usual serious defects upon the developments of the facial bones, as shown by a study of the facial contour. The study of the profile shows a



decided lack of growth in the mandible. Allowed to progress without skillful orthodontic treatment, this would develop into a case similar to that illustrated in Fig. 3.

My desire is to point out that all these unhappy conditions may either be prevented or corrected, and the child allowed to develop and attain its normal type. When lack of anterior growth is evident, that section of the arch should be gently stimulated by painless and gradual methods until the exact space for the permanent incisors is developed. They will then appear unhampered during the period of their eruption, and the deflected nasal septum from this cause will be less in evidence. Should the mesio-distal relation be incorrect, the arches should be placed in their proper relation before the eruption of the first permanent molars in order that the inclined planes of these teeth may properly engage themselves and normal development continue.

Fig. 10 shows us very clearly what may be accomplished in widening the arch. The small model is that of a boy of twelve who had suffered from nasal obstruction during the period when active development should have taken place. The evil results are clearly shown in this narrow, constricted arch. It will be noticed that development is so retarded that there is absolutely no room for the eruption of the cuspid teeth. The larger model represents the corrected case and shows what may be accomplished by proper



stimulation and careful expansion of the dental arch. Careful measurements show that at a point on the vault directly above the first bicuspid teeth and one-half inch above the gingival border, the vault of the untreated model measured exactly twenty-five hundredths of an inch, whereas the measurement taken from the same locality upon the completed model shows a development of seventy hundredths of an inch. These measurements are important, in that they show that the apices of the teeth have been moved very extensively and widening of the entire arch has occurred. In this particular case there seems little doubt but that the floor of the nose has been considerably widened. My belief is based upon the fact that the patient has experienced a wonderful improvement in his ability to breathe correctly. This improvement has been gradual, and I believe will continue until the bony development which shall follow the widening of the arch has become complete. Dr. Pullen, of Buffalo, and Dr. Reoch of Boston, have noted similar improvement in nasal respiration following the excessive widening of the upper arch.

Fig. 11 illustrates a developing case of the



second division of class two in the temporary denture. There is present a lack of anterior development (or interstitial growth). There is also present a distal position of the lower arch. The upper first permanent molars have just erupted. The lowers are about to erupt. With the arches in this condition, we will have adverse action of the inclined planes of these molars when they come in contact, thus further retarding the growth of the mandible. Development of the anterior segments and a slight mesial movement of the mandible to allow the proper occlu-

sion of the first molars is the simple treatment required here; but if not accomplished the case will result in severe malocclusion.



Fig. 12 shown simply to illustrate a case of the second class treated for a young woman of nineteen years. The changes here noticed were accomplished in four months without pain or special inconvenience and with very pleasing facial results.



Fig. 13 is shown to illustrate what very satisfactory facial improvment may be accomplished. This is not an unusual result following the correction of malocclusion and the stimulation of the contiguous bony structure.

A CASE OF SUPRAPUBIC CYSTOSTOMY ON A PROSTATIC; WITH REMARKS ON THE TECHNIC AND INDICATIONS OF THIS OPERATION.

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

PROSTATIC hypertrophy is an affection of slow evolution and of unlimited duration, which, in its multiple stages, requires a treatment suitable to each one, and, although I am far from being a partisan of palliative operations in this particular class of cases, yet at the same time I feel that the operation of suprapubic cystotomy, which has been much abused, as well as neglected, has its field in certain instances. Dr. Gouley, in his recent and excellent book, entitled "Surgery of the Genito-Urinary Organs," expresses himself as follows: "Suprapubic drainage is necessary when catheterism becomes difficult or impossible. This drainage has been accomplished by simply puncturing the bladder and establishing a fistula, or by a systematic epi-cystotomy, as the late Hunter McGuire has done so successfully in many cases. Men in feeble health, who at no time were in condition for a radical operation, have survived these processes for years, with but little inconvenience." This sizes up the question.

In November, 1905, I was asked to see a man, sixty-nine years of age, on account of chronic urinary retention. The history of the case is briefly as follows: the patient had always been a thin although wiry man, but has never enjoyed robust health. The disturbances of micturition dated back some eighteen years, at which time he commenced to urinate more frequently than usual and the quantity voided at each micturition was rather small in amount. For the first three or four years he apparently did not suffer from nocturnal micturition, but little by little this developed, so that the patient was obliged to arise two or three times in a night. About three years before seeing this patient he had consulted an excellent physician, who had diagnosed prostatic hypertrophy with residual urine and had instructed the patient in the use of the catheter. He followed his physician's directions for a certain time, and having been considerably alleviated from his symptoms after a number of months, he neglected the use of his instrument.

When I saw the patient the first time, he was urinating six or seven times during the day, and three or four times during the night, the act being accompanied with considerable straining. In the intervals, the patient said that he passed urine involuntarily, and, as will be shown, this was merely due to overflow of a distended bladder from chronic retention. Occasionally, in the evening, the patient experienced slight chills, he complained of ardent thirst, tongue was dry and digestive disturbances were evident.

Upon rectal examination the prostate was found enormously developed, at least the size of an apple, but its surface was smooth and in consistency it was everywhere equal; in other words, the hypertrophy was regular.

Exploration of the urethra with a bulbous bougie, No. 22 French, showed that the instrument passed the entire length of the canal up to the prostate without any evidence of stricture, but when an endeavor was made to enter the bladder, it was practically impossible without the use of undue force to make any instrument enter.

The patient complained of much hypogastric pain, which had been present for five days previously and was increasing, while by percussion, the bladder was found distended to within two fingers' breadth of the umbilicus.

The patient both from the temperature and pulse, as well as the general symptoms present, including his age, was looked upon as a very poor surgical risk, but, to save life, it appeared evident that some interference must be undertaken, in order to relieve the sepsis, which was undermining the patient's strength. After deliberation, I decided to perform suprapubic cystostomy, which was done the following morning, Nov. 17, 1905.

The patient having been fully prepared the afternoon before, ethyl-chloride-ether narcosis was administered; the bladder was rapidly opened and stitched to the skin, the entire interference lasting seven minutes. As the subject was thin, the operation was exceedingly easy.

On the next day the temperature had fallen to normal, while the pulse, which had been about 100 and very wiry in character, had become fuller and beat 72. The expression of the patient was also much better. Irrigation of the bladder, with a 1-3000 solution of silver nitrate.

The sutures were removed on the sixth day, when perfect union of the artificial meatus was found to have taken place.

The patient lived eighteen months after the operation in a very comfortable condition, having had a suitable apparatus made for the hypogastric meatus. He died from cerebral hemorrhage. No autopsy could be obtained.

One word now as to the technic which I deem should be employed in these cases. First of all, given the age of these subjects and their very low vitality, operative rapidity is of paramount importance and, therefore, the procedure should be as simple as possible.

Like any operation the patient should, if possible, be properly prepared. The large intestine should be emptied by a copious enema and the field of operation thoroughly shaven and treated as for any ordinary laparotomy. After narcosis is obtained, the patient is placed in Trendelenburg position and, if the bladder is not distended with urine, it should be filled with a solution of boracic acid. Of course, when the organ is distended, this is not needed. I have always considered that the use of Peterson's bag was both useless and dangerous.

The incision should be made in the linea alba, measuring from 6 to 8 cm. in length and carried down to the pubic bone. The linea alba is then incised to almost the extent of the cutaneous incision, but in order to avoid involving the peritoneal cul-de-sac, it is more prudent to stop the incision a few millimeters below the skin incision. When the linea alba and transverse fascia have been incised, the left index should be introduced into the prevesical cellular tissue behind the posterior aspect of the pubic bone, down to the neck of the bladder. Occasionally, on account of the tension of the abdominal muscles, or when the bladder is deeply seated, a certain amount of dissection with the finger may be necessary. A bladder distended by retention is easy to recognize on account of its reddish muscular fibers. The peritoneal cul-de-sac is pushed upwards and retained in this position by the left index finger.

The question now comes up as to whether the bladder should be first opened or a cystopexy done, in order to prevent the urine from escaping into prevesical cellular tissue, and to settle this I would say that all depends upon the condition of the bladder. A bladder which is not too distended will have thick walls, and in this case it is better to do cystopexy first, while in cases of complete retention the bladder, being greatly distended, possesses thin walls and one would, from this fact, be liable to penetrate directly into the bladder cavity with the needles, thus giving exit to the urine. Consequently, in these cases, it is preferable to incise the bladder first and afterwards to suture it. A point which should not be neglected, is to make the incision into the bladder in the neighborhood of the neck, as McGuire recommended. After the bladder is opened the finger is introduced in order to explore the cavity and ascertain the condition of the prostate. When the bladder is emptied it should be thoroughly irrigated. Six sutures are sufficient to hitch the borders of the organ to the skin, and these should include the aponeurosis, the internal border of each rectus, the subcutaneous fat and the skin. When the opening in the bladder is made near the neck and when the cellular tissue is thick, it is perhaps better to merely include the skin in the sutures. The sutures should not be too tight and the coaptation should be made with as much care as possible.

The after-treatment should consist in irrigations of the bladder, and a proper apparatus for drainage established, so that no urine will soil the wound. There are plenty of excellent contrivances which constantly aspirate the urine from the bladder and thus keep the wound perfectly clean, and when attention is paid to this detail, the result in these cases will be most satisfactory.

To sum up, it may be said that suprapubic cystostomy should be resorted to in those cases where the patient is too feeble to undergo a radical cure of his prostatic hypertrophy and where the accidents of prostatism are serious. The operation is indicated when it is impossible to pass a catheter where there is acute retention in a mechanical prostatic, but this condition of affairs is rarely met with in practice. Usually, after suprapubic aspiration of the bladder, catheterism becomes possible and the permanent catheter will be sufficient. Pain, difficulty in catheterism, or the impossibility of the patient's tolerating the permanent catheter might also be indications for this operation. In acute and superacute infections, when the permanent catheter does not do away with the phenomena of infection, cystostomy should be undertaken in order to save the patient's life.

In the chronic form it occasionally is indicated when the permanent catheter does not influence the infection, or improve the general condition of the patient, or when accidents of sepsis reappear each time the catheter is removed. In old prostatics, the cystitides, rebellious to every treatment, require cystostomy, because the bladder pains cease as soon as the organ is opened. Abundant or repeated vesical hematuria places elderly patients' lives in danger and suprapubic cystostomy may frequently be of great service. In cases where calculi are present, especially when the bladder is infected, suprapubic cystostomy becomes both a curative and palliative operation.

Temporary cystostomy should usually be the end to be obtained and one should endeavor to re-establish the functions of the urethra as soon as the serious accidents have disappeared in cases of complete retention, hemorrhage and acute infection. The bladder pain, incomplete chronic retention, the permanent catheter which does not empty the fundus of the bladder, are all conditions which may be benefited by this operation.

Clinical Department.

CANCER OF THE MALE URETHRA. A REPORT OF TWO CASES.

BY J. DELLINGER BARNEY, M.D., BOSTON,
Assistant in Anatomy in the Harvard Medical School; Assistant Genito-Urinary Surgeon to the Boston Dispensary.

ATTENTION has again been called to that rare lesion, cancer of the male urethra, by an admirable article by Preiswerk.[1] In this article the disease is thoroughly exploited in every detail, and an exhaustive bibliography of the subject is added. Preiswerk gives a list of 39 cases, with a more or less complete history of each, which he considers to be undoubted examples of the disease. To this he adds three more cases, discovered too late to be tabulated, making his total 42.

In spite of his apparently complete bibliography, Preiswerk evidently failed to see an article on the subject by J. Basil Hall, of Bradford, England.[2] In this, Hall gives a list of 21 cases confirmed by microscopic examination, and 5 others which he classifies as doubtful because not so confirmed, making a total of 26. Of these, all but 6 are included in Preiswerk's list, so that the latter, with these 6 cases, makes, up to date, 48 reported cases of the disease.

Preiswerk's paper is exhaustive, and I shall not attempt to throw any further light on the subject. I do, however, wish to emphasize the fact that the disease is more often than not incorrectly diagnosed before operation, involving operative as well as prognostic blunders, while in many cases the real state of affairs has been discovered only after several operations have been performed. Of the 39 cases tabulated by Preiswerk, 21, or 54%, were regarded as cases of ordinary urethral stricture, either uncomplicated or, according to circumstances, attended with urinary extravasation, peri-urethral abscess, or urinary fistula. Among other diagnoses were syphilis of the urethra, and vesical or prostatic calculus. In 11 cases, however, a diagnosis of cancer of the urethra was made before operation. It is thus seen that the great majority of the cases, hardly any two of them seen by the same man, were not regarded so seriously as they should have been.

Preiswerk's cases also show that the symptoms are by no means uniform, or characteristic of a cancerous process. The fact that these symptoms and signs are such as might fit almost any case of stricture or calculus makes it all the easier to commit an error, especially in the prognosis, which may influence not only the future of the patient, but that of the surgeon himself. It is also a fact that cancer of the male urethra may appear in what we may term virgin soil, and for once the patient who denies venereal disease must be believed.

The two cases which I report are quite typical, in that the disease was primary in the deep urethra, and that, on microscopic examination, each proved to be a squamous cell carcinoma. Both cases occurred in the Massachusetts General Hospital, in the services of Dr. J. Collins Warren and of Dr. Arthur T. Cabot. I wish here to express my sincere thanks to these gentlemen for permission to report them.

[1] Ueber das primäre Karzinom der männlichen Urethra. Zeitschr für Urologie, 1907, Bd. I, Viertes Heft.
[2] Ann. Surg., Phila., 1904, vol. xxxix, pp. 375, 384.

CASE I. Service of Dr. J. Collins Warren. Age sixty-two, married. Occupation, farmer and artist. Birthplace, Germany. The patient first came to the hospital on Aug. 1, 1904, with the following history:

F. H. Unimportant.

P. H. Two years ago had sudden attack of retention of urine, lasting about five hours. No trouble after this for about a year. Since then has had several brief attacks of difficulty of micturition with dribbling, and was able to pass but a drop at a time. About seven months ago had chills every few weeks for about three months.

P. I. Five days ago had another attack of acute retention, lasting for about two days, when he again began to pass a little urine. Patient has been constipated for a long time, and feels much run down physically and mentally, he thinks from "overwork."

Patient denies venereal disease. Tobacco about ten cents a week. No liquor.

P. E. Well developed and fairly nourished. Reflexes normal. Nose clear, teeth poor. Nothing abnormal found in heart or lungs. Abdomen not remarkable, save for an enormously distended and tender bladder, which reaches almost to the umbilicus.

Marked edema of prepuce, with multiple strictures of urethra (size not stated).

At junction of scrotum with perineum is a marked wall of induration, extending to the posterior limits of the perineum, and apparently surrounding the urethra. *Rectal examination negative.*

Perineal section was performed on Aug. 2, and the entire urethra made to take a No. 40 French sound. Convalescence was not remarkable, except that it was somewhat slow, and on Aug. 29, the patient was discharged to the Convalescent Home at Waverley, Mass.

At the end of about three weeks, the patient again came to the hospital for dilatation of the urethra. He still passed most of his urine through the perineal wound. General condition excellent. Sounds were passed under ether, and two weeks later the patient again went to the Convalescent Home, the wound being still open.

On Oct. 21, 1904, the patient was again sent to the hospital for further treatment. The urethra had again closed, and the perineal wound still remained open.

An operation was performed by Dr. Warren on Oct. 26. The perineal wound was enlarged by an incision three quarters of an inch long at each end in the median line, opening a cavity which was lined with indurated, grayish granulation tissue, looking suspiciously cancerous. Up to this time there was nothing in the appearance of the parts to suggest anything but an ordinary stricture of the urethra. The cavity was then thoroughly curetted, and a large sound was passed through the urethra into the bladder. A hasty examination of the curettings showed cancer, and no further operation was deemed advisable. The patient was put to bed, and put on constant drainage.

The subsequent history is as follows:

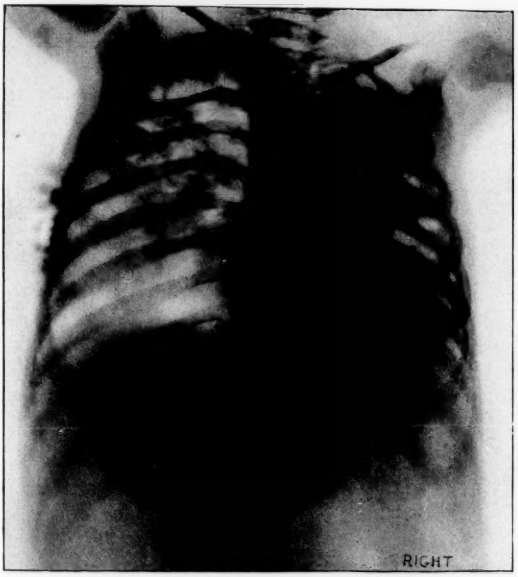
Oct. 30. Patient fairly comfortable, except for occasional pain in perineal wound, which was exquisitely tender. Granulations bright and clean. Urine clear and of good quantity. Catheter removed to-day. Bladder washed out with a solution of boric

acid three times daily. Slight edema of scrotum. Micturition entirely by perineal wound.

Nov. 3. Wound shows little tendency to heal, but looks bright and clean. Attempt to wash bladder via penis or perineal wound very painful. Micturition free through perineum.

Nov. 6. Complains of "stitch" in left side on deep inspiration. Examination shows only slight friction rub in left base in axillary line (cancerous pleurisy?).

A CASE OF ACQUIRED DEXTROCARDIA — YOUNG



A case of acquired dextrocardia associated with advanced phlebitis.

removed with scissors. Perineal stricture cut, and catheter tied in bladder.

Aug. 10. Bladder washed with boracic acid solution. Considerable urine still comes through perineal opening:

Aug. 14. Very little leakage.

Aug. 27. Catheter removed. Urine still comes freely through perineum, but also to some extent through the penis.

Aug. 28. Patient discharged against advice.

Pathological report by Dr. William F. Whitney, on specimen removed at operation:

"Mass which had grown from the urethra into a wound made for perineal section.

"Composed of masses of epithelial cells, many imbricated, and some showing fatty degeneration, separated by firm bands of connective tissue.

"Epithelioma."

Diligent search of state and town records and correspondence with local authorities, has failed to elicit any further information about this man. I have , but the time and cause of

incomplete cases, and the in any way to put the ıard, this paper will have

DEXTROCARDIA ASSO-
/ANCED PHTHISIS.

UNG, M.D., BOSTON.

e. Age, nine years. Ad-
ıe Good Samaritan Dec. 4,

ıatient had coughed practi-
ectoration for the past two
ı any hemoptysis. Patient's
:uberculosis, Dec. 28, 1906,
s.

the chest was as follows:
ardiac impulse was felt in
nammary line 7 cm. to the
nd by percussion the left
right border could not be
ılsation was noted. Heart
lity, no murmurs.
moved less. There was
ght front, and behind from
and at the extreme base.
ight apex behind and in the
anterior axillary line, bron-
:where throughout the right
were heard throughout the
rales throughout the right
ess on the left, but a few
eard at the apex behind.
esent in the sputum.
— Visible pulsation in the
ıaces at the right border of
cardiac impulse was felt in
ithin the left mammary line,
median line, where the left
cussion. The right border
of the median and 1.5 cm.
line. The upper border was
nds were regular and there

Lungs. The examination of the lungs was the same, except there was bronchial breathing over the upper half of the right lung in front.

April 22, 1907. Heart. — Pulsation was seen in the first, second and third spaces in the right parasternal line. The cardiac impulse was best felt and the sounds heard loudest in the third space right, 1 cm. inside the mammary line, 6 cm. to the right of the median line. The borders could not be determined by percussion. There was pulmonary resonance over the normal area of cardiac dullness. The sounds were regular and there were no murmurs.

Lungs. — There was dulness throughout the right front and back with amphoric breathing and voice sounds above the right clavicle and in the outer half of the first, second and third spaces right; bronchial

[3] I was fortunate enough to have charge of this case as a house officer. After it was found that cancer was present, I made a thorough physical examination, with metastases in view, but none were to be found.

Clinical Department.

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Nov. 3. Wound shows little tendency to heal, but looks bright and clean. Attempt to wash bladder via penis or perineal wound very painful. Micturition free through perineum.

Nov. 6. Complains of "stitch" in left side on deep inspiration. Examination shows only slight friction rub in left base in axillary line (cancerous pleurisy?). Pain entirely relieved by tight swathe.

Nov. 8. Pain in chest has disappeared. General condition about the same. Locally no induration about wound but finger introduced into it comes in contact posteriorly with a rough, indurated mass. Urination entirely by perineal route, and under perfect control. Sounds up to No. 24 French passed easily and without pain or bleeding through entire course of urethra to bladder. Bladder washed as before. Slight cystitis.

Nov. 12. Patient was discharged relieved.

Pathological report by Dr. William F. Whitney:

"Fragments curetted from the urethra showing, on microscopic examination, solid masses of large, flat, epithelial cells, with occasional whorls infiltrating the deeper tissues.

"Epithelioma."

A letter from the town clerk of Marshfield, Mass., where the patient lived, states that he died on March 30, 1905 (eight months from time of entrance), of cancer.[3]

Case II. Entered July 26, 1889, in the service of Dr. Arthur T. Cabot. Age fifty-eight years, single. Occupation, farmer; born in England; family history not recorded.

P. H. Gonorrhea fifteen years previously. Acute retention seven years later, relieved by catheterization by his physician. Since then has had more or less difficulty of micturition, with dribbling.

P. I. About one week before entrance noticed a tender bunch in the perineum.

Physical examination. Enters with an abscess in the perineum, size of a hen's egg, tender, red and painful. Patient thinks the abscess ruptured while on his way to the hospital. Pus and urine escape from the opening. No record of any rectal examination.

July 27. Operation by Dr. Cabot. Olive-tipped bougie shows tight stricture four inches from the meatus, just in front of the abscess. An incision through the abscess opens several pockets containing pus and cheesy material. A long urethral stricture was laid open, but the bladder could not be entered, owing to swelling of the tissues from edema and urinary extravasation.

Aug. 1. Good convalescence. Passing water freely through wound.

Aug. 6. Operation by Dr. Cabot. Director passed easily into bladder through wound, of which the swelling had now subsided. Some indurated, grayish granulations growing along urethra, and in perineal wound removed with scissors. Perineal stricture cut, and catheter tied in bladder.

Aug. 10. Bladder washed with boracic acid solution. Considerable urine still comes through perineal opening:

Aug. 14. Very little leakage.

Aug. 27. Catheter removed. Urine still comes freely through perineum, but also to some extent through the penis.

Aug. 28. Patient discharged against advice.

Pathological report by Dr. William F. Whitney, on specimen removed at operation:

"Mass which had grown from the urethra into a wound made for perineal section.

"Composed of masses of epithelial cells, many imbricated, and some showing fatty degeneration, separated by firm bands of connective tissue.

"Epithelioma."

Diligent search of state and town records and correspondence with local authorities, has failed to elicit any further information about this man. I have learned only that he is dead, but the time and cause of death are not known.

If these two somewhat incomplete cases, and the foregoing remarks serve in any way to put the general surgeon on his guard, this paper will have served its end.

[3] I was fortunate enough to have charge of this case as a house officer. After it was found that cancer was present, I made a thorough physical examination, with metastases in view, but none were to be found.

A CASE OF ACQUIRED DEXTROCARDIA ASSOCIATED WITH ADVANCED PHTHISIS.

BY J. HERBERT YOUNG, M.D., BOSTON.

Case 412. M. C., female. Age, nine years. Admitted to the House of the Good Samaritan Dec. 4, 1906.

Mother stated that the patient had coughed practically since birth, with expectoration for the past two years. There had never been any hemoptysis. Patient's father died of pulmonary tuberculosis, Dec. 28, 1906, after an illness of two years.

Physical examination of the chest was as follows:

Heart. — The greatest cardiac impulse was felt in the fifth space in the left mammary line 7 cm. to the left of the median line, and by percussion the left border corresponded. The right border could not be determined. No visible pulsation was noted. Heart sounds regular, of good quality, no murmurs.

Lungs. — The right side moved less. There was dullness throughout the right front, and behind from the apex to mid-scapula, and at the extreme base. Bronchial breathing at the right apex behind and in the second space right to the anterior axillary line, broncho-vesicular breathing elsewhere throughout the right lung. Scattered dry râles were heard throughout the right front and fine moist râles throughout the right back. There was no dulness on the left, but a few medium moist râles were heard at the apex behind.

Tubercle bacilli were present in the sputum.

Feb. 25, 1907. Heart. — Visible pulsation in the second, third and fourth spaces at the right border of the sternum. The greatest cardiac impulse was felt in the fourth space, 2.5 cm. within the left mammary line, 4.5 cm. to the left of the median line, where the left border was found by percussion. The right border was 5.5 cm. to the right of the median and 1.5 cm. within the right mammary line. The upper border was at the third rib. The sounds were regular and there were no murmurs.

Lungs. — The examination of the lungs was the same, except there was bronchial breathing over the upper half of the right lung in front.

April 22, 1907. Heart. — Pulsation was seen in the first, second and third spaces in the right parasternal line. The cardiac impulse was best felt and the sounds heard loudest in the third space right, 1 cm. inside the mammary line, 6 cm. to the right of the median line. The borders could not be determined by percussion. There was pulmonary resonance over the normal area of cardiac dullness. The sounds were regular and there were no murmurs.

Lungs. — There was dulness throughout the right front and back with amphoric breathing and voice sounds above the right clavicle and in the outer half of the first, second and third spaces right; bronchial

to amphoric breathing at the right apex behind to the lower angle of the scapula, with increased voice sounds. A few dry râles were heard at the right base. Dulness at the left apex behind, with a few dry râles.

June 7, 1907. Heart. — Visible and palpable pulsation in the second and third spaces between the sternum and the right mammary line. The cardiac impulse was best felt in the third space in the right mammary line, 7 cm. to the right of the median line. The left border was beneath the sternum and could not be accurately determined. The upper border was at the second rib and the right border in the right mammary line. The sounds were regular and there were no murmurs.

Lungs. — Dulness throughout the right front, except slight resonance, not tympanitic, from the apex to the third rib external to the right mammary line, over which area there was amphoric breathing, voice sounds, and cracked pot percussion note. In the back there was dulness below the lower angle of the right scapula, fair resonance above, with bronchial to amphoric breathing. Fine moist râles were heard throughout the lower half of the right lung. There was no further involvement of the left lung.

This case is unique in that during the transposition of the heart from left to right it was continually under observation. The displacement was gradual and, as it became more marked, signs of cavity were elicited at the right apex. There were no subjective symptoms referable to the heart, and, except for rare intervals when the patient was confined to her bed for a day or two, with slight gastric disturbance, she was dressed and about the ward all the time without any discomfort. Nor was there any clinical evidence that the heart was not performing its function perfectly in its abnormal position. X-ray examinations were made, but owing to the involvement of the right lung, the right border could not be accurately determined, although the absence of the normal cardiac shadow to the left of the sternum is clearly shown in the accompanying print.

About twenty-five cases of acquired dextrocardia associated with chronic pulmonary tuberculosis, without the presence of fluid or air in the pleural cavities, have been reported, but in all the cases, with the exception of four, the displacement was complete when the case first came under observation. A. K. Stone [1] mentions two cases from the literature which were seen before and after the displacement, in one of them there was a cavity in the right lung. Dunham [2] reported two cases which were also seen both before and after the displacement, and in which the diagnosis was verified by x-ray. One of these cases later showed signs of cavity at the apex of the right lung. In all the cases the right lung was the site of chronic phthisis, with the left but little if any involved.

In the article already referred to, Stone mentions the presence of cavities as a cause of cardiac displacement, and cites cases, while in the other cases reported the displacement has been ascribed to the sclerosis of the right lung, together with compensatory emphysema of the left, that is, the heart is pushed as well as pulled over, and although in some of these cases cavities were described, their importance as an etiological factor was not considered. In the present case the cavity in the right lung, the loss of substance thereby producing a void into which the heart was aspirated, was considered the cause of the displacement. The rôle played by cavities was further emphasized by cardiac displacements of a less degree in three other cases. In two cases with a cavity at the left apex, the heart was pulled upward and outward. The third case showed, for over a period of many months, involvement of the entire left lung, but without signs of cavity, with the heart in normal position. In making a routine examination pulsation was felt in the fifth space 6 cm. outside the mammary line, 14 cm. to the left of the median line, where also the left border was found by percussion. From previous experience a cavity was suspected and was found just within the lower angle of the left scapula.

Stone's article has an extensive bibliography on the subject of cardiac displacements. Since its publication, a few single cases have been reported, but with the exception of Dunham's two cases, and one case reported by Lowenburg,[3] they have not been reported in sufficient detail to be of any value.

I am indebted to the visiting physicians of the House of the Good Samaritan for permission to report this case, and to Dr. A. W. George, the Röntgenologist, for x-ray examinations.

[1] BOSTON MED. AND SURG. JOUR., vol. el, no. 2, pp. 29–37, Jan. 14, 1904.
[2] *Ibid.*: Vol. cliv, p. 155, Feb. 8, 1906.
[3] Am. Med., 1904, vol. viii, p. 403.

Reports of Societies.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

MEETING HELD AT THE MASSACHUSETTS GENERAL HOSPITAL, MARCH 15, 1907.

THE President, DR. A. COOLIDGE, JR., in the chair.

DR. A. P. ROGERS read a paper on

THE CORRECTION OF MALOCCLUSION AND ITS RELATION TO RHINOLOGY.[1]

DISCUSSION.

DR. THOMAS FILLEBROWN: I am happy to have the privilege of opening the discussion upon so interesting a paper, and I shall be glad to say a word to emphasize its good points if I can. What the essayist has said about the widening of the floor of the nasal cavity, I think to be true. One point I think needs a little more emphasizing.

The common idea in regard to regulating the teeth is that the crowns are simply turned outward, but that the ends of the roots are not moved. I think you will find that stated in a great deal of the dental literature as well as in the general medical literature. I think this is not true. The leverage as it is applied will not confine itself simply to the turning out of the teeth, but it will and it does, as has been proved by these cases that the essayist showed this evening, and by a great many others, actually widen the arch. The bones move apart and new bone is formed, not only in this

[1] See page 784.

one case that he mentioned, but in every case, so that there is a benefit rendered to the breathing power by enlargement of the nasal passages.

There is one point not mentioned in connection with the regulation of the teeth, — the influence of these irregularities upon the voice and articulation, as well as upon the looks of the patient. No person with upper front teeth that stand far out beyond the under, or with an under jaw so short that the under teeth are far back of the upper teeth, can ever speak perfectly.

I think that for a full understanding of the subject in relation to the enlargement of the cavities and the relation of the teeth to abnormal conditions, it may be well to recall the circumstances of the development and eruption of the teeth. We know that in the uterine stage the dental follicle is formed at a very early period, and then it is simply a pulpy mass. Yet before birth that pulpy mass has resolved itself into a well-formed sac, and in the lower part of it is a little bony substance, which proves, when it is erupted, to be the crown of the tooth. All above that crown of the tooth is in a pulpy mass. The crown is floating, in a sense; it has no power of resistance whatever. When it is erupted it is impelled forward by the nervous power of the system and not by any mechanical force. The root is formed as the crown moves forward; the distal end of this sac is all open, soft, pulpy, until the root is completed and has no power to resist anything.

At one stage of the progress a little follicle is given off from the sac, and becomes the germ of a permanent tooth and rests there under the same conditions as the germs of the temporary teeth. Then at from six to eight years old the temporary teeth are shed; how is that done? Not by any mechanical force; Nature has got ready for it to take place, and Nature is prepared to do the operation. She does it by being stimulated by the presence of the permanent tooth. What we call a carneous body, a fleshy body, is formed right on the spot where the absorption is to begin. Giant cells are very plenty there, and they go on and dissolve away that root as fast as the crown of the permanent tooth advances. Pretty soon it is all gone, and the temporary crown falls off for lack of support. But now supposing the crown of the permanent tooth does impinge directly on the end of the root of the temporary tooth, but on its side. In such cases we find the absorption takes place on the side, and may go on down to the crown, and the other portion of the root will remain. In such a case the eruption of the permanent tooth may take place and the temporary tooth still remain. Neither the temporary nor permanent set offers any mechanical resistance, and extracting only occasionally affords any relief. Another circumstance should be remembered: that as the permanent teeth are erupted, the alveolar wall is built up around the roots to hold them. The roots are not erupted through the bone, but the bone is formed after the teeth are erupted. When that temporary tooth is shed, the temporary alveolus is all absorbed and carried away and the permanent tooth comes out on a larger arch into new position, new bone is formed around it making a new alveolus to sustain it.

The question arises in the case of the deformities we have seen here, Are the teeth deformed because of the deformity, or is the deformity the cause of the non-eruption of the teeth? A case shown here to-night, where the third molar was impeded in its eruption by its impinging against the second molar, shows very plainly that in that case it was the malposition of the germ of that tooth, and its inability to move on as Nature intended, that made the trouble. So with another one, I think Dr. Mosher showed it, where the cuspid tooth was deformed and non-erupted. Now that tooth, when it made this trouble, was not exerting any pressure whatever, but its very presence by being mal-posed produced the irritation.

In these deformities the type is imperfect, it is not all acquired. These jumbles which were shown to-night were not acquired by mechanical pressure but by a variation of a type. You have too small a jaw for too many teeth and they cannot all get out and are held back. It is a question in my mind whether these deformities are caused by the teeth or the deformities cause the non-eruption of the teeth. As I remarked a little while ago, it is the tooth first and the alveolar walls afterwards.

I believe that the development of any tissue out of place, out of its proper relations, is almost sure to produce finally an irritation; this is true of the teeth.

Dr. H. P. Mosher: In six weeks I was able to find practically fifty cases of delayed eruption of the incisor teeth. In all of them, not only were there anterior ridges and spurs but also an anterior deviation of the septum. I feel, therefore, that delayed eruption of the incisor teeth must be considered as having a permanent place as one of the causes for deviations of the septum. The reason for this is as follows: the incisor teeth are imbedded in the premaxillary bones, two for each premaxilla. From the upper face of each premaxilla spring two small vertical processes which together make a V and hold between them the tip of the vomer. The vomer at birth consists of two leaves. The premaxillary wings act as cleats to control the position of the vomer. If these cleats are disturbed, the tip of the vomer is thrown out of line, and one or both of the leaves of the vomer are broken, and the cartilage which they hold is dislocated. Directly underneath the premaxillary wings and separated from them by very thin bone, are the central incisor teeth. It is found in the clinic that when there is marked delay in the eruption of one second central incisor, on the side of the delayed tooth the premaxillary wing is enlarged. Owing to this, the groove made by the premaxillary wings is distorted and the hypertrophied premaxillary wing pushes the tip of the vomer out of its true line. This results in a spur along the upper border of the vomer as well as in a deviation of the septum.

As the central incisors play such a prominent part in connection with deviations of the septum, I was extremely interested in what Dr. Rogers had to say about his ability to regulate the central incisors and to get them into place at the proper time.

The point which he brought out, that it is easy by changing the angle of the teeth to widen the nasal fossa, is very important. I should like to have this definitely proven. In order to do this the dentists and the rhinologists, as Dr. Rogers said, should work together. You can change the form of the alveolus by changing the angle of the teeth. Is there an equal change in the nose? Dr. Fillebrown says that there is. As yet I have not seen it.

Dr. Bogue, of New York, recently has been working with one of the rhinologists there on a case of this kind. Unfortunately, his case is as yet incomplete. Cases of this kind are of the greatest interest. We need accurate knowledge from accurate measurements, measurements of the nose as well as measurements of the jaw, not the vague statements which we have had in the past. It seems that we are on the point of getting this knowledge.

Dr. E. E. Foster: Many of the persons we see with a deformed superior maxilla are mouth breathers. The question of the relation between the two is as yet unsettled.

Some are of the opinion that mouth-breathing causes the palatal deformity, while others, especially Siebenmann and his scholars, contend that the deformed arch is only a part of a congenital narrow skull which caused the mouth-breathing.

From the literature and clinical evidence it seems reasonable to conclude that mouth-breathing produces the greatest number of deformed superior maxilla; a congenital or "inherited" narrow skull causes a lesser number, and rickets and allied processes produce the least number.

If it be true that mouth-breathing does cause deformities of the superior maxilla, then it is necessary first to establish good nasal respiration before the orthodontist begins his work.

On the other hand, the cases with a congenital narrow nasal cavity cannot be made good nasal breathers, without a sacrifice of normal tissues, until the orthodontist has widened the arch, which procedure widens the nasal cavity. This is a clinical fact observed for about twenty years.

Schroeder was the first to call attention to it.

It therefore appears that the orthodontists and rhinologists should work more or less together in these cases.

Intranasal measurements, referred to by Dr. Mosher, have not, so far as I can find, been made in connection with the widening of the hard palate.

From a suggestion made by Dr. Potter, of Boston, I have recently been able to prove in one case by intranasal measurements that a widening of the nasal cavity does occur after widening of the palate.

The second bicuspids were separated 7 mm. and the difference in distance between the inner surfaces of the inferior turbinates was 3 mm.

My method is to shrink the mucous membrane over the inferior turbinates with cocaine and adrenalin, then, with an instrument after the plan of an inside caliper, to measure the distances between the inner surfaces of the inferior turbinates at their middle third. This place can be selected with accuracy for future measurements by means of a bar at right angle to one of the caliper arms, which comes in contact with the upper lip at its junction with the nose. This bar indicates the distance the arms are in the nose.

DR. ALGERNON COOLIDGE showed a case of

GUNSHOT WOUND OF THE ANTRUM.

A small boy in taking part in an amateur performance had a gun loaded with wads accidentally discharged a short distance from his face. When first seen a few weeks later there was an extensive wound of the cheek, which had contracted leaving a fistula discharging pus, which was also escaping from the nares. Under ether it was found that the anterior wall of the antrum had been destroyed, also the wall between the antrum and the nasal cavity, most of the nasal septum and the neighboring ethmoid cells, leaving a large cavity representing both nasal cavities and the left antrum and ethmoid region. From this cavity eighteen gun wads were removed. That neither the orbital nor cranial cavity had been opened seemed almost miraculous. The detritus from the wound had been forced backwards, filling the posterior nares and naso-pharynx. This was cleaned away and nasal breathing re-established. No plastic operation to close the hole in the cheek was attempted, nevertheless this has closed of itself and leaves but a comparatively slight scar.

DR. J. P. CLARK showed

A CASE OF FRONTAL SINUSITIS OPERATED ON BY THE LUC METHOD.

For frontal sinus disease the Killian operation is the one now usually chosen because the ethmoid cells are affected, and in the majority of cases it is difficult to destroy them in any other way, but in a certain class of cases which are indicated by the x-ray plates, one can operate by the Luc method and destroy the ethmoid cells sufficiently to cure the cases. This can be done when the x-ray shows that a large opening can be established between the sinus and the nasal cavity.

The patient was a man twenty-seven years old, who was referred to me by Dr. Getchell, of Worcester, who had operated on him through the nose, and cleaned out the ethmoid cells as well as could be done through the nose; but the discharge still persisted and the frontal pain. He had been troubled with discharge from the nose and pain for rather an indefinite time, a number of years.

He was brought into the hospital and I operated on him on Feb. 14. Of course it is too early to see what the ultimate result will be; he has been very comfortable since the operation, the discharge has very much diminished, and the pain has ceased. An interesting feature of the case which was shown by the x-ray was that the sinus was divided by an almost complete bony septum. This was removed at the operation.

DR. MOSHER showed specimens in connection with the following cases:

EMPYEMA OF THE ANTRUM.

Some years ago the fact was demonstrated by Dr. F. C. Cobb and Dr. Thomas Fillebrown, both of Boston, that the antrum often acted as a reservoir for the frontal sinus. Since then we have gotten into the habit of considering many infections of the antrum as reservoir infections from the ethmoidal cells and the frontal sinus, occasionally forgetting the teeth as a common cause.

A recent case of mine illustrates this: The patient was a woman of fifty-six years, with a toothless upper jaw. Examination showed a foul discharge of pus from the right nostril and a large opening into the antrum underneath the inferior turbinate. About this opening there were many granulations. I operated without first taking an x-ray plate, the case was so clearly one of empyema of the antrum.

I operated feeling that I might run into malignant disease. Instead, in this toothless jaw, I found an unerupted canine tooth which was ulcerating forward through the canine fossa. This finding made what seemed likely to be a serious case a simple case. The root of the tooth acted as if it had more intelligence than the crown, because it had attempted to turn around and to go the right way, and to take the crown with it.

CARCINOMA OF THE LARYNX.

The specimen which is being passed round is the larynx as it was removed at the operation. The patient came into the accident room fighting for his breath, cyanotic and semi-conscious. It was possible to get a view of the vocal cords, and it was seen that they did not open. Dr. F. C. Cobb did a tracheotomy and relieved the case of its urgency. While the patient was under observation in the ward he got into trouble with the tracheotomy tube so that it had to be readjusted. After a short stay in the ward the patient was sent to the Throat Department. Here he was watched for a time by Dr. Cobb.

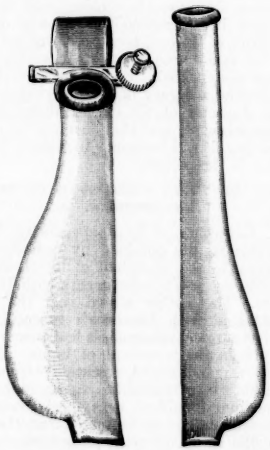
I operated about six weeks ago and found a very extensive case of malignant disease. In order to get beyond the growth it was necessary to take out the whole larynx and with it the trachea almost down to the sternal notch. The front wall of the esophagus was removed to the same point. At first the patient was

fed by rectum, and then after a few days through the tube which he wore in the esophagus. He did nicely.

The question now comes up as to the proper time for closing the wound in the floor of the mouth so that the patient may take his food in the natural way. Since so much of the trachea and so much of the front wall of the esophagus were removed, there was little tissue left from which to make a bridge between the two. If I close the wound in the floor of the mouth too soon, in an attempt to remake the anterior wall of the esophagus, and the patient should swallow by mouth and burst this open, the fluid will run into the trachea and kill him. At the present time the patient feeds himself by attaching a funnel to the rubber tube which he has worn in the esophagus since the operation. He cannot talk but speaks in a very loud whisper. After one has been with him a short time it is easy to understand what he says.

A DEVICE FOR INSERTING SKIN-GRAFTS IN THE RADICAL MASTOID CAVITY.

I wish to show a device which I have tried of late at the Eye and Ear Infirmary. It is a rubber bag so shaped that when it is distended with water it takes the form of the cavity made in the temporal bone by



the radical mastoid operation. It is designed to replace the gauze plug for holding a skin-graft in position. In order to use it the graft is cut in the usual way. One or two layers of gauze are put over the bag and over these the silk tissue bearing the graft. The bag is inserted in the ear, is distended with sterile water, and the end of the bag clamped. The bag is worn the usual length of time. Then the clamp is removed, the water let out, and the bag withdrawn. I have used this balloon graft-carrier with success.

In using the bag it is necessary not to distend it to such an extent as to give undue pressure on the walls of the canal. By using the bag most of the packing usually employed in the ear can be done away with. For instance, instead of filling the radical cavity with twenty or thirty small pieces of gauze, three or four pieces can be used for the Eustachian tube, and the rest of the cavity plugged with the bag. The bag can be used to hold in place the ordinary flaps made from the canal walls.

Dr. Coffin showed x-ray plates of a

CASE OF CYST,

which occupied practically the entire antral cavity. A canine tooth was removed through an incision in the canine fossa, the wall of the cyst was partly curetted away and drainage established through the nose.

INTERNATIONAL DERMATOLOGICAL CONGRESS.

Sixth International Dermatological Congress, Held at the Academy of Medicine, New York City, Sept. 9 to 14, 1907.

First Day, Monday, Sept. 9. Morning Session.

The President, Dr. James C. White, of Boston, in the Chair.

After the report of the Secretary-General, Dr. J. A. Fordyce, of New York, and the confirmation of officers, the following addresses of welcome were delivered:

FOR THE UNITED STATES GOVERNMENT.

Surgeon-Gen. P. M. Rixey, United States Navy, representing President Roosevelt, extended a most cordial welcome to the Congress, especially to the delegates from foreign countries, and he expressed the hope that the occasion would be the means of forming many ties that might be mutually beneficial. The coming together of such a body of men, experts in learning and specialists in the great field of dermatology, could not but be productive of much good to suffering humanity, not only of this but of every country here represented. The speaker said that in his naval medical work he had found, upon investigation, that the proportion of dermatological diseases to all others was about 13%. This showed clearly how important the subject was, and in the post-graduate medical school of the United States Navy at Washington more and more attention was being given to skin troubles, both in their didactic teaching and in the laboratory, and many of their most interesting reports were on that subject, especially in connection with tropical medicine.

FOR AMERICAN UNIVERSITIES.

President Ira Remsen, of Johns Hopkins University, said he esteemed it a great honor to be permitted to appear before this Congress and express a welcome on behalf of the universities of this country, and he sincerely hoped that the work of the Congress might in every respect prove profitable and pleasant. The universities were the training-schools of research. This fact had come to be recognized in medical circles in this country, and there was at present a well-defined university movement among the medical schools. The universities were taking possession of the medical schools and the latter were trying to get under cover of the universities, although the speaker said he was afraid that there would not be enough universities to go around.

FOR THE MEDICAL PROFESSION OF THE UNITED STATES.

Dr. Joseph D. Bryant, of New York, president of the American Medical Association, said the members of the American Medical Association were always glad to extend a cordial fraternal welcome to all those who labored in the advancement of medical attainment and for the relief of human affliction.

ADDRESS BY THE PRESIDENT OF THE CONGRESS.

Dr. James C. White, of Boston.[1]

[1] See Journal, Oct. 17, 1907, p. 513.

AFTERNOON SESSION.

DR. EDWARD L. KEYES, of New York, vice-president, in the chair.

LEPROSY: PROPOSALS FOR DIMINISHING THE DIFFUSION OF THE DISEASE.

PROF. R. CAMPANA, of Rome, Italy, in this paper, said that local treatment was necessary in leprosy in the initial stages of macular and tubercular symptoms. These could be arrested by radical surgical treatment, followed by cauterization. Tubercular leprosy was a purely local disease of much gravity, and its contagiousness, which had been proved experimentally, was in direct proportion to the shortness of the time that the malady had lasted. Hence the radical treatment of the disease was to destroy its manifestations as soon as they appeared. Hence the treatment of patients in whom these lesions had occurred ought to be directed towards diminishing the injurious effects of these trophic changes, more particularly those of the joints, to prevent breaches of surface, and to arrest the continuance of sources of sepsis in the individual patients and in their houses and in leper asylums.

DR. DOUGLASS W. MONTGOMERY, of San Francisco, said he did not understand Professor Campana's point of view that a patient, when once discovered to have leprosy, was no longer a menace to society. As a matter of fact, it was frequently difficult to establish the source of infection, and personally he could recall but a single instance where he was able to do it. So far as the first evidences of leprosy were concerned, the physician rarely saw them. The early symptoms were such that the patient himself did not usually attach much importance to them, and it was only later, when the disease was well established, that medical advice was sought. A long period frequently elapsed between the initial symptoms of leprosy and a well-marked case of lepra.

DR. H. E. MENAGE, of New Orleans, said that in the majority of cases of leprosy the micro-organism was either not demonstrable or had lost its virulence in the trophic lesions. He recalled cases, however, that had apparently originated from late lesions of tubercular leprosy.

DR. WALTER REMSEN BRINCKERHOFF, United States Laboratory, Honolulu, said that in Hawaii leprosy had been kept under control for over forty years by means of segregation, and he had been struck by the extreme difficulty that had been encountered in persuading lepers to go into segregation. The popular conception was that when a patient once entered a leprosarium, it was to die, and this prejudice against these institutions should be overcome. People should be informed that proper treatment would render them more comfortable, even if it would not cure them. In this way only would it be possible to get hold of the cases early.

DR. ISADORE DYER, of New Orleans, said that the trophic lesions of leprosy were evidence of the fact that the disease was more or less effete. An observation of a number of cases in the lazaretto in Havana seemed to show that. They pointed with a large degree of suggestive argument to the fact that although that institution had existed for many years, there was not a single instance of infection occurring in the hospital itself. In Louisiana they had had since 1894 something like 240 cases under observation at various times, and the method of isolation practiced there had apparently not only reduced the number from year to year, but had reduced it to nearly one quarter what it was when isolation was commenced.

DR. PRINCE A. MORROW, of New York, said it would be a practical impossibility to isolate cases of leprosy only during the early stages of the disease, simply because in a large proportion of cases the disease remained undetected in those stages. Even in cases of tubercular leprosy there were certain prodromata or initial symptoms which might entirely escape observation, and the nature of which could not be determined with absolute certainty without a microscopic examination.

DR. H. RADCLIFFE-CROCKER, of London, England, said there were mild cases of leprosy in which the symptoms might continue for an interminable number of years, and some of these patients got quite well. Leprosy was by no means a hopeless disease, and in the mild nerve forms the prognosis was fairly good. At all events, the duration of the disease was so long and the symptoms so trifling that they scarcely incommoded the patient.

DR. BURNSIDE FOSTER, of St. Paul, said that his experience with leprosy among the Scandinavians, mostly Norwegians, had led him to recognize the communicability of the disease, but he believed that it was communicated with great difficulty, that it could only be engrafted upon a peculiar soil, and that there were many who could not be inoculated with it.

PROFESSOR CAMPANA, in closing, said he did not wish to have it understood that he was opposed to isolating cases of leprosy, because it was very difficult to state the exact time when the infective period of the disease disappeared. He simply wished to insist on the scientific accuracy of the observation that the infectious character of the disease disappeared with its full development, and that in order to prevent it from spreading, it was necessary to destroy the sources of infection in the patient.

TREATMENT OF LUPUS VULGARIS WITH BERANECK'S TUBERCULIN.

DR. A. LASSUEUR, of Lausanne, Switzerland, said the favorable results obtained by radiotherapy and phototherapy in the treatment of lupus vulgaris had obscured the successful experiments with the various tuberculins. The author stated that the favorable results obtained with Béraneck's tuberculin in the treatment of surgical tuberculosis had encouraged him to employ it in the treatment of lupus. Béraneck's tuberculin, which differed essentially from Koch's, was a mixture of extracellular toxins prepared in a culture medium (bouillon) of a special composition, and of extracellular toxins extracted from the bacillary bodies by the action of ortho-phosphoric acid (1%). This tuberculin not only possessed immunizing properties, but it likewise exerted upon the Koch bacillus either a bactericidal action, when employed in concentrated solution, or a simple attenuating action when employed in dilute solution.

CONTRIBUTION ON THE NATURE AND TREATMENT OF LUPUS ERYTHEMATOSUS.

PROFESSOR CAMPANA and DR. G. LANZI, of Rome, Italy, presented a paper on this subject, in which they made the following statements: (1) That lupus erythematosus often became an incurable disease under the treatment at present generally used. (2) That there were cases of lupus erythematosus upon which tuberculin acted in the same way as it acted on true lupus. (3) That there were some cases not cured under the most active surgical treatment, but which were afterwards cured with surprising ease by the use of mercury ointment, which had been recommended by Hebra as most efficacious, although not proving so in practice in many instances. One must be guided

by an analysis of the conditions, in order to distinguish the special peculiarities forming the basis of the disease in each case. To begin with an injection of tuberculin and get no local or general reaction would certainly assign the case to a basis quite other than the tuberculoid predisposition accepted by many, but not admitted by all in lupus erythematosus. To begin with local and general treatment with mercury and obtain no apparent improvement therefrom would not predispose one to continue that method of treatment. In cases where the mercury had failed, and the tuberculin had given a positive reaction, local surgical treatment was possible; where the contrary happened, and the physician in charge had not attempted precautionary tests, local treatment was injurious and even disastrous.

Dr. M. B. Hartzell, of Philadelphia, said there was a certain number of cases of lupus erythematosus in which it was difficult to make the differential diagnosis between that affection and lupus vulgaris, and it was quite possible that a large proportion of the cases in which the tuberculin reaction was obtained were in fact lupus vulgaris rather than lupus erythematosus.

Dr. Stafford Taylor, of Liverpool, England, said the remedy in the treatment of lupus erythematosus that had proven most successful in his hands was pyrogallic acid. In the common or stationary types of the disease he used a 10% ointment of pyrogallic acid in the same way as he used it in lupus vulgaris.

Dr. Samuel Sherwell, of Brooklyn, N. Y., said that in cases of lupus erythematosus where the mucous membranes were not involved he had almost invariably obtained excellent results by the use of the curette, followed by the application of the acid nitrate of mercury.

Dr. Herman Lawrence, of Melbourne, Australia, referred to a method which he had found very successful and effective in the treatment of chronic lupus erythematosus. It consisted of scarification, followed by rubbing in iodoform, and then the application of a waxed India-rubber pad at moderate pressure, which was kept up for twenty-four to forty-eight hours.

ON THE VALUE OF AN ABSOLUTELY VEGETARIAN DIET IN PSORIASIS.

Dr. L. Duncan Bulkley, of New York, read a paper on this subject, in which he offered the following conclusions:

(1) The cause of psoriasis was as yet unknown. Many facts pointed to its not being a purely local disease of the skin, although the character of the individual lesions strongly suggested a parasitic element in their production; possibly one of the ordinary micro-organisms, universally present, took on a pathogenic action when the soil was suitable. (2) Psoriatic patients often appeared to be in perfect health, but metabolic disturbances could generally be discovered by complete quantitative urinalysis. (3) The error was generally along the line of faulty nitrogenous metabolism and diminished excretion of the purin products. (4) Long observation of cases showed a decided increase of eruption with excessive meat eating. (5) Marked improvement in the eruption occurred under the same treatment when a strictly vegetarian diet was faithfully carried out. (6) Continued strict vegetarian diet was often attended with freedom from eruption, and relapses were often directly traceable to dietary errors in this direction. (7) This was the experience of the writer with this plan of treatment in private practice for twenty years.

Dr. H. Radcliffe-Crocker, of London, said he had seen psoriasis in vegetarians and in butchers, and he had arrived at the conclusion that diet had very little influence upon the course of the disease. His conclusions in regard to the influence of diet upon psoriasis were totally unlike those of Dr. Bulkley. Of course, in cases occurring after middle life, in patients with an undoubted gouty tendency, the proper restriction of the nitrogenous food was certainly indicated, but a study of the age at which psoriasis frequently made its appearance showed that fully two thirds of the cases had their onset before the age of thirty; that is, during a stage of life when errors in metabolism were comparatively few.

(To be continued.)

Book Reviews.

Surgery: its Principles and Practice. By various authors. Edited by W lliam Williams Keen, M.D., LL.D. Vol. II. Ilustrated. Philadelphia and London: W. B. Saunders Company. 1907.

It is a pleasure to be able to continue our very favorable criticism of Keen's surgery. Volume II presents the same virtues of the art of bookmaking which characterized Volume I. It is, moreover, a slightly smaller book, for which the editor is to be congratulated. The pictures are uniformly extremely good, appropriately chosen, and in many instances deserve unstinted admiration; to an unusual degree they literally illuminate the text.

Certain chapters demand particular praise. Diseases of bones, by Dr. Nichols, seems to us the most complete, concise and convincing treatment of the subject that has appeared in America. The same is true of his pathology of the joints; indeed, the latter may in the opinion of many excel even the former chapter; the pictures are superb. The clinical part of joint surgery is acceptably written by Dr. Lovett; it is certainly a very difficult task to gather into 70 pages the essentials of such a subject, even though an additional chapter, one third longer, is devoted to orthopedic surgery exclusive of joints. This latter chapter, also by Dr. Lovett, seems to us extremely good; it has also been condensed, but a proper proportion of its various divisions has been maintained; the style is lucid, the illustrations plentiful and well adapted to the text.

The long chapter (210 pages) on fractures, and one on dislocations (60 pages) are of somewhat uneven character. In certain instances the treatment indicated does not seem to us ideal (*e. g.*, open treatment of fracture of the patella). Too little space is devoted to certain important general conditions. Fat embolism is given but 13 lines, and delirium tremens 20 lines in 210 pages, while a consideration of the ractures of carpal bones covers more than three pages, exclusive of pictures. Allis's method of reduction of hip-joint dislocations deserves more detailed consideration than is accorded to it. Nevertheless, these chapters are perhaps as good a presentation of the subject as we may expect under existing circumstances. Dr. Binnie's chapter on muscles, tendons and bursæ is particularly

satisfactory, and is written in a most attractive style. Its 34 pages contain all that is essential without evidences of crowding. The lymphatic system, by Dr. Gerrish, is interesting and sufficient, the pictures supplementing the text unusually well. In the otherwise excellent chapter on the surgery of the skin, treatment is frequently meager and unsatisfactory; many methods are mentioned without comment, and others, equally well known, are entirely omitted. Wright's vaccine for furunculosis receives one and one-half lines; no reference is made to Pfaff's fundamental researches on dermatitis venenata; none to the use of picric acid in burns; from a practical standpoint, a considerable elaboration of treatment would be desirable in this chapter.

The pathology of the nervous system, by Dr. Spiller, is an admirable section, embodying much of his own original work; it is beautifully illustrated, and unquestionably is one of the best chapters in the book.

Surgery of the nerves, and of the spine, two chapters by Dr. Woolsey, are completely satisfactory, among other things, his description of laminectomy, its indications and prognosis, is the best we have seen.

The Traumatic Neuroses, by Dr. Dercum, certainly gives us all that can be condensed into 30 pages, upon this most perplexing subject. It is to be commended for the fairness and common sense which are evident throughout its paragraphs. Dr. Da Costa adds a brief article on Surgery among the Insane; it is of undoubted value, and has been previously too much overlooked in textbooks: it is presented in an attractive and vigorous style.

An extensive and exhaustive index finishes this admirable volume.

Diseases of the Genito-Urinary Organs and the Kidney. By ROBERT HOLMES GREENE, A.M., M.D., Professor of Genito-Urinary Surgery, Medical Department of Fordham University; Genito-Urinary Surgeon to the City and to the French Hospitals, New York City; and HARLOW BROOKS, M.D., Assistant Professor of Pathologic Anatomy, University and Bellevue Hospital Medical School; Visiting Surgeon to the City Hospital, New York City. With 292 illustrations. Philadelphia and London: W. B. Saunders Company. 1907.

In their preface, the authors disclaim the intention of writing an exhaustive and complete treatise upon the subject with which their work is concerned, and thus disarm criticism with regard to this aspect of it, and leave the reviewer merely with the regret that they should not have made more complete a work which is in so many other respects admirable. As it is, it does not reach the general plane of excellence of some of the best publications which are devoted to this field, such as those of Frisch and Zuckerkand, in Germany, or of Keyes or White and Martin in this country.

The intention of the writers is stated to have been to devote equal attention to the medical and surgical maladies of the region with which the work is concerned. We do not think that they have thereby added to its value, although it cannot be denied that some of the parts devoted to the medical side of the subject are excellent.

As a bit of book making, the volume is somewhat disappointing, more especially in view of the high standard of excellence which its publishers have already attained in some of their other productions of medical literature. In this work there are a good many inferior, and but few really good, illustrations. This fact causes the book to lack the finished appearance which is rapidly becoming a *sine qua non* of surgical publications. It must be added, however, that up to the present time, no really well and handsomely illustrated work on this field of surgery, has been issued and the volume which we are discussing does not fall below the previously attained standards in this respect.

Other than this, the most conspicuous defect of the work before us is the entirely inadequate and scant manner in which many of the subjects are treated, thus, the entire subject of Renal Injuries is given less than three pages. Six pages include all that the authors have to say upon the subject of tumors of the kidney and their treatment, while the whole surgery of the kidney is compressed into about sixteen pages of print. The pathology of tumors of the bladder is discussed in two short paragraphs, while the treatment of this condition is dismissed in a couple more paragraphs, and three lines only are devoted to the question of the surgical treatment other than that of the removal of such growths by the but little approved method of Nitze's cystoscope.

This characteristic of too curt a consideration of some of the more important divisions of the work deprive it of a great part of its value in many of the sections which demand a full discussion, if they are to contribute anything of importance to the subjects.

Per contra the treatment accorded to certain other parts of the work is most satisfactory. Among them may be noted the sections on "Compensation in Renal Disease," "Uremia," "The Blood Pressure in Renal Disease," etc.

The Principles and Practice of Modern Surgery. By ROSWELL PARK, A.M., M.D., LL.D. (Yale), Professor of the Principles and Practice of Surgery and of Clinical Surgery in the University of Buffalo; Ex-President of the American Surgical Association; Surgeon to the Buffalo General Hospital, etc. With 722 engravings and 60 full-page plates in colors and monochrome. Philadelphia and New York: Lea Brothers & Co. 1907.

Roswell Park cannot fail to interest us whenever he writes for our instruction, and his present volume deserves special notice as the mature work of one of our most eminent American surgeons. It aims at being a complete treatise, in one volume, on the principles as well as on the practice of modern surgery. In his preface the author points out that a new work in surgery

enters a field of literature already rich in excellent books differing widely in plan and view point, and he remarks truly that when surgery can be represented by a conventional and well-settled type of book it will have ceased to advance. Accordingly, he sets out for us in a great volume of more than a thousand pages his matured views upon the whole subject of surgery.

The captious critic might assert that expert opinions on all the details of so extensive a science as surgery, as it exists to-day, cannot be held by a single human intelligence, and doubtless Park himself would admit the truth of this view. In spite of its sundry shortcomings, however, we cannot but regard this great work as an extremely important contribution to surgical literature, especially to the medical student's library.

The special trend of a writer's interest must develop itself in the construction of so extensive a work as the one we are considering. While Roswell Park is known to American surgeons as a sound practitioner and an able operator in many fields, he has become conspicuous especially for his interest in certain branches, and as a cultivated student of general surgical history and literature. Accordingly we find that he devotes 543 of his 1,048 closely printed pages to pathology, surgical diseases, surgical principles, the processes of repair and the affections of tissues, leaving 503 pages only for the consideration of special or regional surgery. The reviewer may therefore conveniently divide this book into two nearly equal portions, — that dealing with the theory and development of surgical affections, and that dealing with practical, clinical surgery. Probably such a division is fair and accurate, yet one cannot but feel at times that the second half of the book especially might have been elaborated into a subsequent and independent work. The interests of surgery have become so far-reaching in recent years, as Park himself points out, and the endeavors of surgeons are now so concerned with nearly every branch of medicine that one feels it to be almost impossible adequately to confine within two covers a treatise on so vast a subject. One discovers, therefore, on reading the present volume, that the first half is the more elaborate and satisfactory, while the second half, though interesting, is little more than an epitome.

This reviewer may not attempt to discuss in detail the immense wealth of material with which the author presents us, though it is proper to name two or three chapters of special interest. Chapter VI, on auto-infections in surgical patients, is peculiarly well worth reading, and the opening paragraph serves as its text: "One of the greatest advances made in pathology has been the establishment of the fact that a great many of the morbid conditions from which the human race suffers are those due to causes arising entirely from within its own system. . . . That these general facts have been recognized for centuries is perhaps a credit to the powers of observation of practitioners of past generations. Exact knowledge, however, has come only with exact methods of laboratory research. . . . The subject of *Auto-intoxication* has been too commonly relegated to the domain of internal medicine." The subject, "The Status Lymphaticus," engages our author's attention and he devotes his luminous Chapter XIV to that interesting and little understood topic. He gives us in Chapter XXII an extremely readable, unhackneyed essay on gunshot wounds, drawing largely upon American, English and Japanese experiences in recent wars, and illustrating his text with many new and striking pictures.

"*A tumor is a new formation, not of inflammatory origin, characterized by more or less histological conformity to the tissue in which it has originated, and having no physiological function.*" With that definition, Park enters upon his brilliant Chapter XXVI, into which he succeeds in condensing an astonishing amount and variety of valuable information. It is probably the most useful chapter in the book, and incidentally the author makes a plea for his own convictions regarding the *parasitic theory of tumor formation.*

The last half of the volume, though full of valuable and original suggestions and advice, is too crowded to admit of such interesting writing as emphasizes many of the previous chapters. Moreover, it must be that the author now finds himself dealing occasionally with topics which have failed to arouse his own enthusiasm. The chapter on the head, for example, though sound and conventional, by no means emphasizes the great part which experts now assign to cerebral surgery. That topic is dismissed with 47 pages. The breast, too, is somewhat slighted with a brief 12 pages, and the whole of the great and complex subject of "Abdominal Surgery" is summed up in 188 of the thousand pages which make up the book. But this is cavil, perhaps. Grievous are the limitations of space. One admits more fairly, and with generous appreciation, that the author's exposition and teaching, in this Part VI, show his wide experience, his extensive reading, his sound and judicious mind and practice. It is a pleasure to read and to review so admirable and useful a work.

Cure of Tetanus. — Within the past two months two cases of tetanus have been reported as cured at St. Michael's Hospital by means of hypodermatic injections of tetanus antitoxin.

Bequest to Peekskill Hospital. — Among other charitable bequests in the will of the late Mrs. Mary A. Frost, of New York, is the sum of $5,000 to the Peekskill Hospital, to endow a bed in memory of her mother, Mary A. Hart.

Retirement of Prof. C. A. Ewald from Editorship of the Berliner Medizinische Wochenschrift. — It is announced that Prof. C. A. Ewald, who has been one of the editors of the *Berliner Medizinische Wochenschrift* for upwards of twenty years, has retired, in order to devote more time to teaching and investigation.

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WALKING AND HEALTH.

IN 1867 a young man of twenty-seven years, Edward Payson Weston by name, walked from Portland in Maine to Chicago in twenty-four days and nineteen hours. This was then considered a remarkable feat. Yet, a few days ago (to be precise, on Nov. 27), this same young man — for he seems to have lost none of the vigor and freshness of youth — repeated his performance of forty years ago, gaining on it in point of time by twenty-nine hours. Some features of this amazing walk should particularly interest the medical man.

Weston did not reach Chicago a pathetic figure, doddering, footsore, gaunt and with sunken eyes, as has often been the case at the end of long-distance matches, a condition which might be expected in a man of seventy after so prodigious a task. On the contrary his step was sprightly as at the beginning; he finished lithe and sturdy; his wind was so good that while jogging on he laughed and chatted with his escorts, as he had done throughout all his journey, when he had oftentimes chaffed those who found it difficult to keep up with him beyond a short distance. Within a few days of the end he reeled off ninety-six miles in the twenty-four hours; and at the completion of the trip, in order to manifest his prime condition, he covered, without stopping to rest at all, forty-five consecutive miles.

Mentally his condition was throughout excellent, as was evidenced by the daily reports he found time to supply the *New York Times;* he sent excellent "copy," crisp, bright and interesting, in the best reportorial style. For Weston is not only a "walker"; he is a man quite sanely active in many things beside. He is of that ideal type, the man with an active brain in a sound body. It will interest our orthopedic colleagues that, as he states, he, early in the trip, sprained his ankle; he "walked this off," and soon all pain and discomfiture ceased from it. He ate frequently, as often as he was hungry; and let us assume that he was thoroughly Fletcherian in his mastication. An egg beaten in a cup of hot coffee was a favorite refreshment. When he felt drowsy he ate, and this, he declares, restored him. Frequent meals were essential; for such walking disposed rapidly of tissue elements, which had as rapidly to be renewed. Withal he lost from beginning to end but eighteen pounds.

Truly, this man has demonstrated the superlative excellence of walking as an exercise, especially when associated with good habits and temperate living. It is of all the cheapest, for little paraphernalia is required. It would rejoice us to return in this respect at least to the days of Blaikie, Hazlitt and wise old Samuel Johnson. It would undoubtedly require some little courage to re-establish this beneficent custom; to be seen upon the highways with a haversack upon one's back, comfortably adjusted with straps, and with it insulated bottles and compartments containing compressed food-stuffs. One must also risk a limb or perhaps one's life by collision with "devil-wagons." But for such trials one may find compensation. It is the simplest of all exercises, this old-fashioned brisk striding, head up, the arms swinging, the organs functioning normally, the whole muscular system being in play, while the mind is diverted by glorious and ever-changing scenery during the progress along winding roads. "Give me," wrote Hazlitt, "the clear blue sky over my head, and the green turf beneath my feet, a winding road before me, and a three hours' march; and then to thinking." Whereat Stevenson, "And he must have a winding road, the epicure."

Walking is also perhaps the wisest exercise to recommend to one's patients. In others,— boxing, tennis, weight throwing and the like, — what men do not become slower in their movements after thirty; who, even the most expert, would think, after fifty, of competing with young men in them? Besides, one has to train but little to get into condition for walking; five miles, not a step more, the first day, ten the next, fifteen the third, after which one is not likely to tire, no matter how long a day he puts in at it.

Finally, Weston has proved anew that man is not only the strongest animal in nature, but that he comes pretty near to being the strongest and

most enduring machine. His dispatches state that during one day a team which was accompanying him gave out after it had followed him for fifty miles. The animals stumbled in the road; nor could they proceed further until they had been allowed to rest in a stable. Some men who accompanied Weston in an automobile fared as badly; they were left behind, being exhausted as the result of exposure to the cold, while the walker strode along at an easy gait and without effort. It is well observed that a good horse, a good automobile and a properly trained man might start from the East for San Francisco. The first two would, of course, disappear before the latter had reached a milepost; but most likely the man would, somewhere this side the Mississippi, come upon the horse laid up in a boarding stable and upon the car towed to the repair shop with a wrenched axle. In the race for a month or a year man need not ask for a handicap from any other member of the animal kingdom; nor has he ever devised any machine which can transport him over obstacles and through diverse and difficult conditions as satisfactorily as his own legs.

STANDARDS OF ADMISSION TO MEDICAL SCHOOLS.

The agitation regarding the raising of the standard of admission to medical schools in this country has now been in progress for upwards of fifteen years. Beginning with the requirement of a bachelor's or equivalent degree by the Johns Hopkins school at its opening, about fifteen years ago, the university schools have followed its example, so that now a considerable number have a similar requirement for admission. The whole movement is in a measure a reaction from the deplorable condition into which medical education in the United States had fallen, regarding not only the requirement for admission, but also in relation to the amount of knowledge thought necessary for the attainment of a degree in medicine. The widespread protest against this easy road to professional recognition has resulted in a general and admirable elevation of standard in our best medical schools, together with a closer affiliation of medical school and university. The poorer schools have been forced either to close their doors or else meet in some measure the popular demand for a more adequate training of their students. The general effect upon medical education in this country has naturally been most salutary as shown by the greater productiveness of American students and investigators during the past decade than ever before.

One of the products of a clearer recognition of medicine as essentially a branch of university education has been the development of the Cornell University Medical College, one of the newest and most active schools in the country. We are interested in noting that very recently the announcement has been made that the ordinary high school education, hitherto regarded as adequate for admission, is to give place to a much more rigid requirement. On and after 1908 candidates for admission to this school must be (1) graduates of approved colleges or scientific schools; or (2) seniors in good standing in Cornell University or in any other approved college or scientific school whose faculty will permit them to substitute the first year of a professional course for the fourth year in arts and sciences, and who will confer upon them the bachelor's degree upon the satisfactory completion of the first year of the course in the Cornell University Medical College; or (3) persons who, while not possessing a bachelor's degree, give evidence by examination that they have acquired an equivalent education and a training sufficient to enable them to profit by the instruction in the medical college. In and after 1909 all candidates for admission to the medical college must have at least such knowledge of physics and inorganic chemistry as may be obtained in college by a year's course in these subjects when accompanied by laboratory work. In and after 1910 all candidates for admission must possess a similar knowledge of biology.

In these requirements, as there should be, considerable latitude is allowed, so that the medical course is not precluded for those who show themselves properly equipped, even although they may not have acquired a bachelor's degree. In the present state of academic training, as President Eliot has recently pointed out, the bachelor's degree in itself means little beyond four years spent in study of the liberal arts. It does not imply a training standing in definite relation to later work in medicine. It therefore becomes highly desirable that candidates for medical schools should have not merely a bachelor's degree, but a preliminary training of a sort which has a more definite relation to medicine than an ordinary college course implies. The University of Pennsylvania has been wise in increasing its requirements for admission to its medical school gradually, rather than in the more radical way which certain other universities have adopted. Cornell's plan is similar, aiming as it does toward

a preliminary course of study which lays stress upon quality rather than quantity.

In general, there is considerable evidence that the pendulum has swung back somewhat, and that educators are recognizing that graduation from a medical school at an average age of twenty-six, exclusive of hospital training, is too late. The problem therefore presents itself of making earlier graduation possible without detracting from the real equipment of the student. The experiment is now being tried in the West of prescribing a two-year preliminary course in biology, chemistry and allied subjects for those proposing later to study medicine, thereby making possible the attainment of a medical degree at twenty-four. It is becoming increasingly evident that whatever value an unsystematized college course may have as a general means of culture, it is not essential to medicine and may be positively detrimental in that it not only does not concentrate attention upon important preliminary branches, but delays entrance upon active and independent professional work. A modification of the loose requirement of a bachelor's or equivalent degree will no doubt come to be desirable in the near future. Our eagerness to raise the standard of medical education may be found to have over-reached itself.

MEDICAL NOTES.

DEATH OF PROF. MORITZ SCHMIDT. — The death of Prof. Moritz Schmidt, at Frankfort-on-the-Main, a laryngologist of some prominence, is announced.

AWARD OF THE NOBEL PRIZE IN MEDICINE. — The Nobel prize this year goes to France, the recipient being Laveran, whose name is familiar in connection with pioneer work on the subject of malaria.

AMERICAN DENTAL DEGREES IN GERMANY. — After many years' litigation, the German Courts have finally ruled that an American degree of dental surgery may hereafter be used in Germany when issued by a reputable American college of dentistry. Up to this time the American degree has not been recognized.

INCREASED ENDOWMENT OF THE CARNEGIE INSTITUTION. — At a meeting of the board of trustees of the Carnegie Institution held at Washington, Tuesday, Dec. 10, a letter from Andrew Carnegie was read in which he said he had decided to add $2,000,000 to the endowment of the institution.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Dec. 11, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 59, scarlatina 35, typhoid fever 6, measles 20, tuberculosis 71, smallpox 0.

The death-rate of the reported deaths for the week ending Dec. 11, 1907, was 23.10.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 7, 1907, was 216, against 254 the corresponding week of last year, showing a decrease of 38 deaths and making the death-rate for the week 18.48. Of this number 103 were males and 113 were females; 210 were white and 6 colored; 119 were born in the United States, 92 in foreign countries and 5 unknown; 39 were of American parentage, 153 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 57 cases and 2 deaths; scarlatina, 49 cases and 0 deaths; typhoid fever, 10 cases and 1 death; measles, 23 cases and 0 deaths; tuberculosis, 45 cases and 16 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 44, whooping cough 0, heart disease 29, bronchitis 11 and marasmus 2. There were 16 deaths from violent causes. The number of children who died under one year was 24; the number under five years, 40. The number of persons who died over sixty years of age was 66. The deaths in public institutions were 68.

There were 2 cases and 2 deaths reported from cerebrospinal meningitis during the week.

A CENTENARIAN. — Mrs. Deborah A. Kendall has recently died in Pittsfield, Mass., at the reputed age of one hundred and one years, her death being attributed to old age.

DIPHTHERIA AT TEWKSBURY, MASS. — It is reported that a somewhat extensive epidemic of diphtheria has appeared among the attendants of the Tewksbury, Mass., Almshouse. Up to this time the disease has been practically confined to the nurses, and there seems no reason to anticipate that it will extend to the patients.

EXAMINATION OF MASSACHUSETTS STATE BOARD OF REGISTRATION IN MEDICINE. — At a recent examination of candidates by the Massachusetts State Board of Registration in Medicine, 48 of 84 applicants received certificates. The proportion of rejected candidates was somewhat larger than usual.

NEW YORK.

Fire at the New Jersey State Hospital for the Insane. — During the night of Nov. 27, the nurses' building of the New Jersey State Hospital for the Insane, at Morris Plains, was almost completely destroyed by fire. The rapid spread of the flames cut off the escape of the nurses sleeping on the third floor, and three of them were injured (though none fatally) by jumping from the windows.

Gold Medal from the Jamestown Exposition to Mrs. Henry Parsons. — The jury of awards of the Jamestown Exposition has awarded to Mrs. Henry Parsons a gold medal for a series of photographs illustrating the work of the first children's school farm in New York City, established by her. The farm is located in De Witt Clinton Park, on the shore of the Hudson, and has proved of great interest to the children of the public schools.

The Physicians' and Pharmacists' Mutual Aid and Protective Association of New York County. — On Dec. 6, a number of east side physicians and druggists met and organized a new society to be known as The Physicians' and Pharmacists' Mutual Aid and Protective Association of New York County. Among the objects of the society are the discouragement of the practice of treating the members of lodges for a small uniform fee, of the sale of patent medicines and of the taking advantage of the free dispensaries by persons able to pay for medical treatment.

Work for the Blind. — At a meeting of the League of Political Study on Nov. 26, Miss Winifred Holt, secretary of the New York Association for the Blind, made an interesting address in which she described the efforts of the association to make blind persons self-supporting. In the course of it she related how five sightless operators had been successfully trained for telephone switchboard work. She also expressed the opinion that the field of stenography was an admirable one for the blind, and stated that on the staff of the association there was a blind stenographer who, she found, made fewer typographical errors than any of the others. Incidentally, she compared the manner in which blind children were cared for in Boston and New York, rather to the discredit of the latter city, and said that it was the duty of every citizen to demand that these unfortunates in New York should have the same advantages as those in Boston. Miss Holt is a daughter of Henry Holt, the publisher, and it is largely due to the personal efforts and generous gifts of herself and her sister that the association has been able to accomplish all the good which it has.

Mortality Reports for November and the Week. — The weekly reports of the Health Department show that during the month of November the mortality in the city represented an annual death-rate of 15.87, as against 16.20 in October and 16.61 in November, 1906. Among the diseases in which there was a diminished fatality were the following: the weekly average of deaths from typhoid fever decreased from 24.75 in October to 19 in November; the weekly average from whooping-cough, from 3.75 to 2; from epidemic cerebrospinal meningitis, from 7.5 to 6.75; from diarrheal diseases, from 114.25 to 47; from diarrheals under five years of age, from 107.5 to 40; from cancer, from 62.5 to 56.75; from apoplexy, congestion and softening of the brain, from 51.75 to 45.75; from organic heart diseases, from 145.25 to 140; and from cirrhosis of the liver, from 22 to 16.75. Among the diseases in which there was an augmented mortality were the following: the weekly average of deaths from measles increased from 4.75 to 7.5; from scarlet fever, from 8 to 13; from diphtheria and croup, from 25.5 to 29; from influenza, from 3.75 to 5.25; from pulmonary tuberculosis, from 150.5 to 154.5; from acute bronchitis, from 13.5 to 19.5; from lobar pneumonia, from 84.75 to 116.25; from bronchopneumonia, from 72 to 99; and from Bright's disease and acute nephritis, from 94.75 to 99.5. It is worth noting that during the first week in November the deaths from epidemic cerebrospinal meningitis, for the first time perhaps in two years, were only three in number. Later in the month, however, the deaths from this cause increased, and in the week ending Nov. 30, they amounted to 12. The corrected November death-rate (excluding non-residents and infants under one week old) reached the low figure of 14.85.

Mortality Report for the Quarter. — The last condensed quarterly report of the Bureau of Records of the City Health Department, for the quarter ending Sept. 30, 1907, shows that the death-rate in the quarter was 18.66 per 1,000 of the population, as against 18.51 for the corresponding quarters of the preceding five years; an increase of .15. Comparing the number of deaths from the principal causes and at certain age-groups with those of the preceding quinquennial averages of the corresponding quarters, the

following decreases are found: typhoid fever, 52; malarial fever, 4; smallpox, 7; whooping-cough, 10; diphtheria and croup, 30; pulmonary tuberculosis, 149; all other forms of tuberculosis, 6; meningitis, 93; apoplexy, 86; acute bronchitis, 109; lobar pneumonia, 114; Bright's disease and acute nephritis, 175; old age, 59; sunstroke, 53; suicide, 21; between the ages of five and sixty-five years, 39. The following increases are noted: measles, 106; scarlet fever, 46; influenza, 6; cancer, 34; organic heart disease, 362; bronchopneumonia, 327; diarrheal diseases under five years of age, 468; accidents other than sunstroke, 47; homicide, 26; under five years of age, 51; sixty-five years and over, 147. The decrease in deaths from pulmonary tuberculosis, lobar pneumonia and kidney disease is encouraging, but, on the other hand, the very considerable increase in deaths from cardiac trouble is somewhat ominous. The large increase in infant mortality from diarrheal disease is somewhat difficult to understand, for the past summer was a comparatively cool one, while all the agencies which have of late years been employed for the saving of life among infants and young children were probably in more general operation than ever before. The increase in bronchopneumonia is sufficiently explained by the unusual prevalence of summer diarrhea, as the association of the two affections has long been recognized.

Current Literature.

MEDICAL RECORD.
NOV. 9, 1907.

1. MEYER, W. *Kühn's Lung Suction Mask for the Hyperemic Treatment (Bier) of Pulmonary Tuberculosis.*
2. *MORTON, W. J. *Radium for the Treatment of Cancer and Lupus.*
3. COFFIN, L. A. *Intracranial Complications of Diseases of the Accessory Sinuses of the Nose.*
4. ROCKWELL, A. D. *Phototherapy in Neuritis.*

2. Morton reports 15 cases of carcinoma, sarcoma and lupus treated by radium. All the cases did well. Most were apparently cured, some after a period of years, although a few were inoperable from the ordinary surgical point of view. The writer believes that radium possesses distinct advantages over the x-ray, viz., greater accuracy of dosage, deeper, wider and quicker action, and the ability to utilize the cathode rays. The use of pure radium is an essential. As a routine he gives internally radio-active water, and also aqueous solution of fluorescin, esculin, or quinine to combine with the radium and produce fluorescence internally. [R. I. L.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.
OCTOBER, 1907.

1. *RAVENEL, M. P. *The Etiology of Tuberculosis.*
2. *BREWER, G. E. *The Etiology of Certain Cases of Left-Sided Intra-Abdominal Suppuration — Acute Diverticulitis.*
3. *CABOT, R. C., AND BRUCE, R. B. *The Estimation of the Functional Power of the Cardiovascular Apparatus.*
4. *CRILE, G. W., AND LENHART, C. *The Treatment of Illuminating Gas Poisoning by the Direct Transfusion of Blood.*
5. *GOODMAN, E. H. *The Examination of the Feces for Occult Blood, with Special Reference to the Value of the Benzidin Test.*
6. STONE, W. J. *Factors Influencing the Early Diagnosis of Gastric Carcinoma.*
7. *LERCHE, W. *Diffuse Dilatation of the Œsophagus without Anatomical Stenosis, with the Report of a Case Due to Chronic Cardiospasm.*
8. ATKINSON, A. D., AND HIRSH, J. L. *Pancreatic Lithiasis, with Chronic Interstitial Pancreatitis, Followed by Diabetes Mellitus.*
9. *HAMILTON, A. S. *Typhoid Fever in the Aged.*
10. *THOMPSON, R. L. *Atrophy of the Parathyroid Glandules and Other Glandular Structures in Primary Infantile Atrophy.*
11. BLUMGART, L. *A Tumor of the Mitral Valve.*
12. *CALVERT, W. J. *The Posterior Median Pleural Boundary, with Reference to Grocco's Sign.*
13. BIRNIE, J. M., AND SMITH, M. T. *The Diagnosis of Cerebrospinal Meningitis by Cultures from the Blood.*

1. Ravenel has gathered a large amount of statistical and other evidence as to the various possible modes of entrance into the human body of the bacillus of tuberculosis. He first considers the alimentary tract in its different portions as a route of invasion. The tonsils are probably of importance in this connection. The frequency of infection by bacilli which enter through the intestinal mucous membrane is now believed to be great in consequence of recent work proving that the bacilli can readily gain entrance without producing lesions at the point of entrance. It is shown that the bacilli are then taken up by leukocytes and transported to mesenteric glands, or by the thoracic duct to the venous blood current. It is further shown that a considerable proportion of cases of tuberculosis in man, especially when the history points to intestinal infection, are due to bacilli of bovine type. Contact infections, by kissing, by the handling of contaminated articles, etc., and infection by droplets expelled during coughing and sneezing are also described, but greatest stress is laid upon the importance of recognizing the intestinal route of infection and the probable danger from milk of tuberculous cows.

2. Brewer reports 6 cases of abscess in the left lower quadrant of the abdomen, all of which probably, and 3 of which certainly, were due to perforation of acquired diverticula of the descending colon or of the sigmoid flexure. Minute diverticula, or herniæ of the mucous membrane through the muscular coats of the colon are recognized by pathologists as of not infrequent occurrence. It is believed that their importance as a cause of abscess formation and of peritonitis is not sufficiently well recognized.

3. Cabot and Bruce hold that it is important to supplement the current methods of heart examination by tests to determine the functional capacity of the cardiovascular apparatus, the capacity of the heart for work. For this purpose they have tested several methods and have found them to be of value, especially a modification of Gräupner's method which they perform as follows: the patient is caused to perform a certain number of foot-pounds of work in one minute, by ascending a flight of stairs, the pulse-rate and systolic blood pressure being taken every two minutes. Normally, the pulse-rate which has risen at first has fallen again within four minutes or so; the blood pressure normally rises to a maximum reached six or eight minutes after the beginning of the test. In cases of weak heart the rise of blood pressure is delayed or in severe cases it may be absent.

4. The article of Crile and Lenhart shows by a brief review how unsatisfactory has been the treatment of gas poisoning by the various methods hitherto attempted. With this in mind the authors have treated animals poisoned by gas by blood transfusion as well as by other methods. Of the 6 animals treated by other methods all died; of the 10 animals treated by transfusion 7 lived.

5. Goodman argues with Schlesinger and Holst that the benzidin test is superior to the guaiac and aloin tests for blood in stomach contents, feces or urine. It is simple,

sharper and yet not too delicate to be practical. It is well, however, to confirm positive reactions by the guaiac or the aloin test. The benzidin test is performed as follows: a small portion of the feces solution, obtained by grinding up the feces with water, is poured into a test tube and boiled. While this is cooling a concentrated solution of benzidin is made by dissolving as much benzidin (Merck, puriss.) as is contained in a very small spoon spatula, in 3 to 5 cc. of glacial acetic acid. To 1 cc. of this are added 3 to 10 drops of boiled feces solution diluted with equal parts of water. To the shaken mixture 1 to 3 cc. of 3% H_2O_2 are added. In the presence of blood a deep green or blue color appears. A negative test is certain evidence of the absence of blood. In event of a positive reaction meat in the diet, or the presence of iron, KI, Cu or animal charcoal must be excluded.

7. Lerche mentions cases of diffuse dilatation of the esophagus without organic stricture of which Neumann in Germany has collected 70, but of which very few appear in American literature. He summarizes the results of previous articles bearing upon spasmodic stricture or cardiospasm, and reports a case of ten years' duration where this was present with diffuse dilatation of the esophagus above. The cardiac was dilated by a rubber bag attached to a stomach tube and distended with water under pressure controlled by a manometer. Within two weeks after treatment the patient was well. The dangers of such dilatation, the precautions to be taken and the apparatus used in it by various authors are fully described.

9. Hamilton believes that typhoid is of more frequent occurrence in middle and later life than is generally taught. He bases this belief upon an epidemic of 188 cases of which 27 or 14% were over fifty years of age. The clinical picture in these older persons was usually atypical. The prodromal stage was generally lengthened, the diurnal variation of temperature was greater, chills and sweats, intermittent pulse, cough and digestive disturbances were more common than is usual in typhoid. Mental symptoms were not prominent. Enlargement of the spleen and rose spots were often absent. The mortality in these 27 cases was 22%.

10. Thompson finds that in infantile atrophy the parathyroid glandules as well as the thymus, thyroid and adrenals show degenerative changes out of proportion to the wasting of fat and muscle. Little evidence, however, exists of any causal relation of these degenerations to the disease.

12. Calvert shows by drawings of anatomical preparations that the right pleural cavity nearly always extends inward over the front of the vertebral bodies, often to the left of the median line.

[F. W. P.]

SURGERY, GYNECOLOGY, AND OBSTETRICS.
NOVEMBER, 1907.

1. HAMILTON, C. S. *A New Operation for the Cure of Salivary Fistula.*
2. *SIMPSON, F. F. *Deferred Operation for Ruptured Ectopic Gestation.*
3. *TAUSSIG, F. J. *Metastatic Carcinoma of the Tube and Ovary in Cancer of the Cervix.*
4. MCGIRK, C. E. *Enuresis in the Female Due to Phimosis.*
5. *KANAVEL, A. B. *Chronic Suppurative Processes in the Hand; a Clinical, Experimental and Anatomical Study.*
6. *HALSTEAD, A. E. *Cancer of the Thyroid Gland, with Report of Three Cases.*
7. WATKINS, T. J. *Technic of Supra-Vaginal Abdominal Hysterectomy.*
8. DAVIS, J. S. *A Case of Cicatricial Contraction Following Burn, with Relief by Wolfe Graft.*
9. PLUMMER, S. C. *Technic of Removal of Tubercular Glands of the Neck.*
10. *SINCLAIR, W. J. *Surgical Treatment of Puerperal Fever with Special Regard to General Practice.*

2. Immediate operation has been the axiomatic treatment for ruptured extra-uterine pregnancy. Simpson, with some others, believes this is not always advisable, and his experience with a hundred cases seems partly to justify the belief. He points out that a single hemorrhage from a tube, just as from the stomach, intestines, lungs or uterus, is seldom fatal, and by treatment with morphine and absolute quiet its recurrence can often be prevented till the patient has recovered from the primary shock, under judicious stimulation. In desperate cases, he thinks the risk of such delay is less than that of immediate operation which, however, is still always indicated when the patient is not too profoundly reduced and proper facilities are at hand.

3. In cancer of the cervix, lymphatic metastasis in tube or ovary is extremely rare. Taussig reports a case where it occurred apparently through the lymph channels of adhesions connecting the adnexa with the posterior cul-de-sac. Unless such adhesions exist, he therefore still advises leaving one ovary at hysterectomy for cancer of the cervix in women under forty.

5. Kanavel presents an elaborate study of the mechanics of chronic suppuration in the hand, undertaking, thereby, to show anatomic reasons for the sequence of involvement of the several parts and tissues. By injections with plaster of Paris he demonstrates the connective tissue spaces in which deep accumulations of pus may form, and the routes along which extension of infection is liable to occur. These data he applies and illustrates clinically, describing his incisions for the most adequate drainage of variously located infections, with a view to the best possible subsequent preservation of function. His paper is a valuable contribution to the intelligent treatment of the septic hand.

6. Halstead reports 3 cases of thyroid cancer: one died of secondary hemorrhage while the inoperable tumor was sloughing under Coley treatment; one recovered from operation but her further history is not given; one was well and without recurrence over a year after complete thyroidectomy. The liability of simple goiters to malignant degeneration leads him to urge early radical operation when a previously stationary thyroid tumor begins to increase in size.

10. Sinclair sketches the history of the treatment of puerperal sepsis, commenting on inefficient or injurious measures and describing his own method, which is essentially thorough curettage and copious irrigation and swabbing with weak corrosive sublimate, followed by a light gauze pack for twenty-four hours. This procedure is usually sufficient; but he repeats it, several times if indicated. He uses antistreptococcus serum as a valuable adjunct. The distinction between sapremia and septicemia he believes clinically unnecessary, since both are treated alike and priceless time may be lost waiting for a differential diagnosis. In the event of general peritonitis he advocates laparotomy and posterior colpotomy, with profuse, through and through irrigation. The burden of his plea is for promptness of action, recognizing, nevertheless, that the best treatment of obstetric infections is their prevention by the practice of scrupulous surgical asepsis.

[R. M. G.]

THE LANCET.
NOV. 16, 1907.

1. BUTCHER, W. D. *Inaugural Address on the Future of Electricity in Medicine.*
2. *BERRY, J. *An Analysis of 274 Additional Cases of Removal of Goiter by Operation.*
3. HALD, P. T. *Comparative Researches on the Tryptic Strength of Different Trypsin Preparations and on Their Action on the Human Body.*
4. WESTERN, G. T. *The Treatment of Bacterial Infections by Vaccines.* (Continued article.)
5. BARLING, H. G. *A Second Case of Aneurysm of the Right Subclavian Artery Treated by Ligature of the Axillary and Carotid Arteries with Resulting Cure of the Aneurysm.*
6. GIBSON, G. A. *The Significance of a Hitherto Undescribed Wave in the Jugular Pulse.*
7. *HUTCHINSON, J. *Diverticulum of the Bladder in a Femoral Hernia, without Sac; Operation.*
8. CLOGG, H. S. *A Foreign Body in the Left Bronchus of a Child Expelled through a Tracheotomy Wound on the Fifteenth Day after Inhalation.*

9. WARDEN, A. A. *On the Occasional Necessity of Drainage of the Uterus in Puerperal Infection.*
10. CLAY, J. *A Case of Cirrhosis of the Liver in which Cure of the Ascites Followed an Operation for the Relief of Strangulated Umbilical Hernia.*

2. Berry gives an analysis of 274 cases of removal of goiter by operation, which brings the total number of cases which he has done up to 400. There were 274 operations in 268 patients; 32 were males, 236 females. Of the various reasons for operation dyspnea was the chief in 177 cases, deformity in 31 cases, and discomfort or deformity in 47 cases and dysphagia in only 1 case. In 203 cases the goiter was encapsulated, in 71 cases it was not. One hundred and six of the encapsulated goiters were solid adenoma, 7 of the non-encapsulated were malignant; the cases of pure cyst were extremely rare; there were 7 non-malignant intra-thoracic goiters. As to the nature of the operation, in 209 cases he enucleated the goiter, with one death; in the remaining cases extirpation was done. Out of the 274 cases there were 6 deaths. He used a curved transverse incision in most instances, oblique incisions in a few. Neither myxedema nor tetany occurred in any case.

7. Hutchinson describes a case of diverticulum of the bladder in a femoral hernia and concludes that this condition is not at all uncommon in femoral or inguinal herniæ, especially in elderly subjects, and that in some cases it is almost impossible to avoid cutting open the bladder. In a case where the surgeon suspects that condition during operation the diagnosis may be confirmed by injecting water into the bladder through a catheter.

[J. B. H.]

BRITISH MEDICAL JOURNAL.

NOV. 16, 1907.

1. MOYNIHAN, B. G. A. *An Address on the Pathology of the Living.*
2. *MURRAY, R. W. *The Saccular Theory of Hernia.*
3. CHIENE, G. L. *Preliminary Note on a Simple Operation for Uncomplicated Oblique Inguinal Hernia in Young Adults.*
4. RUSSELL, R. H. *The Morbid Anatomy and Pathology of Infantile and Encysted Hernia, with a Note on Accident of Taxis.*
5. *MCGAVIN, L. *Address on the Use of Filigrees of Silver Wire in the Cure of Herniæ Usually Considered Inoperable.*
6. HALL, I. W. *The Estimation of Fat in Feces.*
7. EVE, F. C. *Some Motile Elements Seen in Certain Cerebrospinal Fluids.*
8. BAYON, P. G. E. *On Peritheliomata and Endotheliomata and Their Position in Oncology.*
9. BEATTIE, J. M. *A Sporozoön in Aural Polypi.*
10. BUSHNELL, F. G., AND WILLIAMS, A. W. *Mycosis Fungoides; its Relationship to Infection and to Malignant New Growth,*
11. LUCAS, J. J. S. *Pericardial Calcification.*
12. BROWNING, C. H. *Experimental Chemotherapy in Trypanosome Infections.*
13. *DEAN, G., HOUSTON, T., RANKIN, J. C., RITCHIE, L. C. P., AND BUXTON, B. H. *Discussion on Phagocytosis.*

2. Murray gives results of 200 consecutive post-mortem examinations where there was no history or evidence of hernia; he found a potential hernia sac in 47. In these 47 bodies, 68 diverticula were present. Of the diverticula 13 were inguinal, 52 femoral and 3 umbilical. In 16 cases more than one diverticulum was present. The article consists chiefly of an argument supporting his theory of the congenital origin of hernia. He believes that circumstantial evidence in favor of the saccular theory of inguinal, femoral and umbilical hernia is so strong, so convincing, that he has every confidence in obtaining a verdict in favor of this theory from the general body of the profession.

5. McGavin demonstrates his method of using silver wire filigrees in the cure of herniæ usually considered inoperable. Such cases include those of repeated recurrence after operations for the "radical cure" of hernia; certain very large hernia; those in which there is a chronic condition tending to constantly repeated increase of intra-abdominal tension, such as chronic bronchitis, asthma, etc.; those cases in which the hernia is the direct result of loss of some portion of the abdominal wall, in consequence of accident or the operative removal of tumors; and lastly, those in patients beyond the age at which it is reasonable to hope for a cure by the ordinary methods. He discusses the use of perforated metal plates, woven wire gridirons and their disadvantages, and describes in detail his method of making the silver filigree which he uses. Asepsis is of paramount importance. The preparation of the skin before operation must be very thorough. The filigree should be placed for five or ten minutes in sufficient ether to cover it, as only in this way can the grease conveyed to it by the workman's hands be removed. From this it should be lifted by sterilized forceps and placed in actively-boiling soda solution till required, when it is lifted straight from the sterilizer into the wound. He closes the wound by means of Michel's clips. There is no drainage used in any cases. He places the filigree between the rectus muscle and its posterior sheath. Absorption of the wire is impossible and fracture is rare. His results have been eminently satisfactory.

13. Dean and others contribute articles bearing on the general question of phagocytosis. Dean's article is a consideration of Metchnikoff's work on this subject and the investigations following this leading up to Wright's work on the opsonic index. Houston and Rankin give a paper on the opsonic and agglutinative power of blood-serum in cerebrospinal fever, based on work during the epidemic which recently occurred in Belfast. Ritchie describes a method of recognizing the presence of specific substances in blood serum influencing phagocytosis, and its diagnostic applications. Buxton discusses absorption from the peritoneal cavity. These papers and the discussion which follows are of great interest, especially to those engaged in work on the opsonic index and its relation to medicine.

[J. B. H.]

THE EDINBURGH MEDICAL JOURNAL.

NOVEMBER, 1907.

1. BERRY, G. A. *Glaucoma Iridectomies.*
2. TURNER, A. L. *Mucocele of the Accessory Nasal Sinuses.*
3. CHIENE, J. C. B. *Looking Back.*
4. THOMSON, A. *The After-History of Two Cases of Inter-Scapulo-Thoracic Amputation for Sarcoma.*

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. NO. 40.

OCT. 3, 1907.

1. *FREUND, H. W. *Treatment of Uncontrollable Vomiting of Pregnancy.*
2. *BANDLER, V., AND KREIBICH, K. *Experiences with Cutaneous Inoculations with Tuberculin.*
3. *NAGELSCHMIDT, F. *Diagnosis and Treatment of Tuberculous Skin Affections.*
4. SCHELLENBERG, G. *The Coincidence of Gouty Attacks with Glycosuria in a Case of Pulmonary Tuberculosis.*
5. ENGELEN. *A Case of Erythromelalgia Combined with Exophthalmic Goiter.*
6. *PAPAÏOANNOU, T. *A Rare Case of Echinococcus of the Optic Nerve.*
7. WEDERHAKE, K. *The Paraffin Prothesis.*
8. WUNSCH, M. *Apparatus for Scoliosis.*

1. Freund believes that the pernicious vomiting of pregnancy is due to an increased excitability owing to the action of toxins, plus a predisposition. The latter results from displacements of the stomach, chlorosis or anemia, nervous or hysterical conditions, or lesions in the nasopharynx. In 100 pregnant women, he found 66% had hypertrophy and swelling of the turbinate bones; this sets up reflex nausea, which is relieved when nasal conditions are cleared up. Constipation, traction of misplaced organs, catarrhs, erosions, ulcers, over-distention of the uterus are also causes. Prophylaxis is of extreme importance. Nervous or hysterical women should be given a course of suggestion as soon as pregnant, and care exercised not to exaggerate the ordinary symptoms. Relieve all reflex causes. Psychic and dietetic measures are the most important, remembering that it is more important to convince the patient that her stomach will digest a

small amount of food than to feed her copiously. In one case the author succeeded in stopping the vomiting by simulating artificial abortion, and he cites other cases cured by psychic means.

2. Bandler and Kreibich describe observations made on adults to determine the effectiveness of Pirquet's method of cutaneous inoculation with tuberculin. Pirquet's direction for children was to use old tuberculin diluted four times, but as the authors were dealing with adults they employed the reagent in full strength. The inoculation was made by applying 2 to 3 drops of tuberculin to the skin of the arm or back, scarifying with a lancet, and then scarifying in another place without the introduction of tuberculin as a control. Out of 37 cases in which no manifestation of tuberculosis existed, 15 gave no reaction at all at the first inoculation. On repetition of the test 2 cases showed a weak reaction. Of the remaining 22 cases, 10 gave a weak or indeterminate reaction, and the other 12 gave a distinctly positive result, shown in the form of redness and swelling at the site of inoculation. Another series of patients comprised individuals suffering from local cutaneous tuberculosis: out of 26 such cases, 22 gave positive results; the other four were cases of advanced miliary tuberculosis which also did not give any reaction to the injection of tuberculin. The failure of such patients to react to tuberculin has already been pointed out by several observers. The microscopic structure of the lesions produced at the site of the inoculation is also described.

3. Nagelschmidt recommends the use of local tuberculin inoculation in the treatment of lupus where the Finsen rays are not accessible, especially for isolated foci, also as a means of differentiating the tubercular skin affections. It has the disadvantage of leaving scars from the ulceration it produces.

6. Papaïoannou says that echinococcus is not at all uncommon in Greece, owing to the fact that the peasants and shepherds live in close association with their dogs. The wells and springs are also sources of infection. According to the statistics gathered by the author, 72% of echinococcus cases in Greece affect the liver, 3.4% the spleen, 2.5% the kidney, 7.7% the peritoneum, 4.7% the lungs, 1.2% the breast, .8% the orbit, 1.2% the bones, 4.7% the muscles, .4% the thyroid, and 4% the broad ligament. He describes several cases of the disease, particularly one in which the optic nerve was the seat of the cyst formation. The patient was a boy of twelve, who six years previously had developed pain in the right eye, which for a time was the seat of inflammatory conditions. Vision failed rapidly and disappeared completely at the end of one month. On coming under the author's observation there was pronounced exophthalmos and pain had recommenced. The diagnosis of new growth was made, but while evacuating the orbital contents, the cyst burst and its true nature became apparent. [L. G. M.]

Münchener Medizinische Wochenschrift. No. 40.
Oct. 1, 1907.

1. König, B., and Grauss, C. J. *Anatomical and Physiological Observations on the First Thousand Cases of Spinal Anesthesia.* (Continued article.)
2. Hannes, W. *Discussion of Methods in the Early Termination of Pregnancy.*
3. *Schenk, F., and Scheib, A. *Bacteriological Examinations of Laparotomy Wounds, Under Extreme Asepsis.*
4. Weibienner, C. *The Suction Massage in Gynecology.*
5. Chaussy. *Skin Flaps in Treatment of Varicose Ulcers.*
6. *Hoffmann, H. *The Use of Synthetic Suprarenin in Local Anesthesia.*
7. Kasai, K. *The Formation of Fibromata Following on Previous Liver Angiomata.*
8. Toyosumi, H. *Cystic Lymphangio-endothelioma in the Abdominal Wall.*
9. Klauber, O. *Abnormal Relations of the Mesentery in Incarcerated Hernia.*
10. Carlan. *Removal of Foreign Bodies from the Left Bronchus.*
11. Grosse, O. *Asepsis of Spinal Anesthesia.*
12. Lengfellner, K. *The Technic for Making Plaster of Paris Impressions in Flat Foot.*

3. Schenk and Scheib have examined a large number of laparotomy wounds, to find out in what per cent of the cases an absolutely bacteria-free operation is possible. Under the ordinary asepsis, as used in their wards, in 38 cases before the operation, the wound was sterile in 25 cases, in 13 bacteria were present. (Staphylococcus albus.) After the operation was completed and the fasciæ sewn up, cultures from the wound showed bacteria in all cases; once a bacillus, in 25 cases staphylococcus albus, in 4 cases a large diplococcus, and in 7 cases a mixed infection. Observation of the course in these cases showed that those cases in which bacteria were present in the wound were not always the ones which ran a post-operative temperature. A series of 45 cases was then examined, in which a much more careful aseptic technic was employed; the wound was found sterile in 23 cases before operation. After the operation the wound was sterile in 10 cases only. The post-operative course was normal in all cases in which streptococci were not found. The authors conclude that even under the most rigid asepsis, an absolutely sterile operation field is impossible.

6. Like all other substances prepared from the organs of animals, suprarenal extract is uncertain in its action, never of the same strength, and does not keep well. There are now three preparations which are chemical imitations of the suprarenal extract: (1) arterenin (dioxyphenylethanol-amin, (2) homorenon (ethylamino-aceto-pyrocatechin), and (3) synthetic suprarenin (hydrochloric acid-dioxy-phenylethanol-methylamin. Hoffmann has tried these preparations, especially the synthetic suprarenin, and finds that in local anesthesia in combination with novocain a perfect anesthesia is produced, with a much longer and more complete anemia of the operation field. The toxic action is no more than that of the old suprarenin, and it can be used with greater precision owing to its constancy, its chemical purity, and the fact that it can be sterilized. The author considers the use of this preparation a step in advance in local anesthesia. [R. D.]

Berliner Klinische Wochenschrift. No. 40.
Oct. 7, 1907.

1. Goldscheider. *The Percussion of the Apices of the Lungs.* (Continued article.)
2. Schmidt, H. H. *A Case of Progressive Muscular Atrophy and Rachitic Pseudoparaplegia.*
3. *Engel, C. S. *Return to the Embryonal Types in Blood Formation and the Origin of Malignant Tumors.*
4. *Manasse, P. *A Case of Infected Hydronephrosis with a Rare Anomaly in the Course of the Ureter.*
5. Virchow, H. *A Form of Kyphotic Vertebral Column.* (Concluded.)
6. Kutscher, K. *Paratyphoid and Infection through Food.*

3. Engel discusses the embryonal blood cells and their mode of formation, and points out that in certain blood diseases there is a return to the earlier type. In the cells of certain malignant tumors, lymphomata and carcinomata, the type of cell suggests the body cells as seen in the embryo. It has been found, of late, that injections of the tissues of mouse embryos retarded the formation or further growth of carcinoma in adult mice. This seems to suggest that malignant tumors are an abnormal return to the embryonic type, and opens a new path for therapeutic researches.

4. Manasse reports a case of a young man who complained of pain in the left side and much disturbance of digestion, associated with rapid loss of weight. When seen a large, smooth, somewhat fluctuant tumor in the epigastrium and left flank was found. The stomach was pushed up, the colon displaced downwards. The appearance was that of a pancreatic cyst, and no urinary symptoms were apparent. During the inflation of the stomach the patient suddenly voided a large amount of urine containing pus, with consequent diminution in the size of the tumor. The diagnosis of hydronephrosis was then made. At operation the left kidney was found to be in normal position and of normal size. The pelvis was, however, enormously distended. The ureter arose at the highest point of the pelvis and ran over the front of the kidney instead of behind it; a very rare anomaly. [R. D.]

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 30, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	9	5
Chicago	—	—	Waltham	7	2
Philadelphia	—	—	Pittsfield	7	2
St. Louis	—	—	Gloucester	—	—
Baltimore	—	—	Brookline	2	—
Cleveland	—	—	North Adams	5	0
Buffalo	—	—	Chicopee	8	5
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	2	—
Providence	—	—	Hyde Park	2	0
Boston	201	39	Melrose	3	1
Worcester	33	11	Newburyport	—	—
Fall River	49	15	Woburn	4	1
Cambridge	28	3	Marlboro	2	1
Lowell	33	11	Westfield	2	—
Lynn	31	8	Peabody	—	—
New Bedford	22	7	Revere	3	1
Springfield	20	4	Attleboro	4	1
Lawrence	22	6	Clinton	3	2
Somerville	17	5	Adams	—	—
Holyoke	23	6	Gardner	2	—
Brockton	10	3	Milford	2	—
Malden	10	2	Watertown	5	1
Chelsea	11	1	Plymouth	—	—
Salem	16	5	Weymouth	1	0
Newton	10	1	Framingham	3	—
Haverhill	17	5	Southbridge	5	2
Fitchburg	5	3	Wakefield	—	—
Everett	7	1	Webster	—	—
Taunton	15	3			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING DEC. 7, 1907.

C. F. STOKES, surgeon. Detached from command of the Naval Hospital, San Juan, P. R., and ordered to report to the surgeon-general of the Navy at the Navy Department for special temporary duty.

H. L. LANGNECKER, A. J. TOULON, D. G. SUTTON and E. W. BROWN, assistant surgeons. Appointed assistant surgeons from Nov. 29, 1907.

W. D. OWENS, passed assistant surgeon. Commissioned passed assistant surgeon from May 17, 1907.

W. A. ANGWIN, passed assistant surgeon. Commissioned passed assistant surgeon from June 2, 1907.

W. G. FARWELL, passed assistant surgeon. Commissioned passed assistant surgeon from June 28, 1907.

C. H. BARBER, surgeon. Orders of Nov. 11 modified; ordered to the Naval Hospital, Boston, Mass.

E. S. BOGERT, Jr., surgeon. Detached from the "Milwaukee" and ordered to the "Pennsylvania."

J. M. BRISTER, passed assistant surgeon. Detached from the "Pennsylvania" and ordered to the "Milwaukee."

F. M. MINSON, passed assistant surgeon. Detached from the "Philadelphia" and ordered to the Asiatic Station, sailing from San Francisco, Cal., about Jan. 6.

J. L. BELKNAP, assistant surgeon. Ordered to the Naval Hospital, Boston, Mass., revoked; ordered to continue duty on board the "Wabash."

W. P. SCHALLER, assistant surgeon. Detached from the "Brooklyn" and ordered to the "Pennsylvania."

G. C. THOMAS, acting assistant surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

H. G. BEYER, medical inspector. Ordered to report at the Navy Department to the surgeon-general of the Navy for special temporary duty.

E. A. VICKERY, assistant surgeon. Detached from duty at the Naval Hospital, Boston, Mass., Dec. 12, and ordered to Washington, D. C., Dec. 16, for examination for promotion and thence to duty at the Naval Hospital, Annapolis, Md.

D. G. SUTTON, assistant surgeon. Ordered to duty at the Naval Hospital, Newport, R. I.

J. MCGUIGAN, pharmacist. Detached from the Naval Hospital, Port Royal, S. C., and ordered to Washington, D. C., Dec. 16, for examination for retirement and then home to wait orders.

SOCIETY NOTICES.

INDUSTRIAL EDUCATION. — The Commission on Industrial Education of the Commonwealth of Massachusetts, acting under Section 6 of Chapter 505 of the Acts of 1906, will give a public hearing in Room 240, State House, Thursday, Dec. 19, 1907, at 7.30 P.M., to all persons interested in the question of the establishment by the state of one or more technical schools or industrial colleges, providing for a three or four years' course for extended training in the working principles of the larger industries of the Commonwealth.

TREASURY DEPARTMENT, BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE. — A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street, S.E., Washington, D. C., Monday, Jan. 20, 1908, at 10 o'clock A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, physical; 2, oral; 3, written; 4, clinical.

For further information, or for invitation to appear before the Board of Examiners, address Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

A PROPOSED NEW ENGLAND PEDIATRIC SOCIETY. — The Visiting Staff of the Boston Floating Hospital request all those interested in the formation of a New England Pediatric Society to meet at the Boston Medical Library, 8, The Fenway, Saturday, Jan. 4, 1908, at 8.15 P.M. It is hoped that this movement will excite general interest and that the attendance at the meeting will not be limited to those working along this special line.

JOHN LOVETT MORSE, *Chairman.*
WILLIAM E. FAY.
ARTHUR WILLARD FAIRBANKS.
CHARLES W. TOWNSEND.
HENRY I. BOWDITCH, *Secretary.*

RECENT DEATH.

DR. ISIDOR PIERCE OBERNDORFER, of New York, died from appendicitis, in which an operation failed to avert the fatal issue, on Dec. 1. He was graduated from the College of Physicians and Surgeons, New York, in 1874, and afterwards took a two-years post-graduate course of study in Leipzic University, Germany. At first engaging in general practice, he gradually devoted his attention more particularly to the treatment of diseases of the skin, and for many years he had been attending dermatologist to the German Dispensary.

BOOKS AND PAMPHLETS RECEIVED.

Studies from The Rockefeller Institute for Medical Research. Reprints. Vol. VII. 1907.

The Conquest of Cancer. A Plan of Campaign, Being an Account of the Principles and Practice Hitherto of the Treatment of Malignant Growths by Specific or Cantrotoxic Ferments. By C. W. Saleeby, M.D., F.R.S. (Edin.). New York: Frederick A. Stokes Co. 1907.

Publications of Cornell University Medical College. Studies from the Department of Neurology. Vol. II. New York City. 1907.

Zur Frage der künstlichen Unterbrechung der Schwangerschaft wegen Lungentuberculose. Von Dr. C. Pradella. Reprint.

The Operations of Surgery. Intended Especially for the Use of Those Recently Appointed on a Hospital Staff and for Those Preparing for the Higher Examinations. By W. H. A. Jacobson, M.Ch. Oxon., F.R.C.S., and R. P. Rowlands, M.S. London, F.R.C.S. Fifth edition. Illustrated. Vols. I and II. Philadelphia: P. Blakiston's Son & Co. 1908.

Abdominal Hernia. Its Diagnosis and Treatment. By W. B. De Garmo, M.D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1907.

A Reference Hand-Book of Obstetric Nursing. By W. Reynolds Wilson, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

A Mistaken Diagnosis of Dementia Senilis. By C. H. Hughes, M.D. Reprint.

Diseases of Children for Nurses, Including Infant Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, Hygiene and Nursing. By Robert S. McCombs, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Report of the Commissioner of Education for the Year ending June 30, 1906. Vol. I. Washington. 1907.

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Original Articles.

A SERIES OF NINETY-ONE CONSECUTIVE BLOOD CULTURES.

BY LAWRENCE J. RHEA, M.D.,
First Assistant in Pathology, the Boston City Hospital,
AND
ARTHUR B. EMMONS, 2D, M.D.,
Senior Pathological Interne, the Boston City Hospital.
(From the Pathological Laboratory of the Boston City Hospital.)

THE following blood cultures were taken during the last three years as a part of the routine of the Pathological Department of the Boston City Hospital. They were made for the most part at the request of the visiting staff of the various services of that hospital. Consequently, we have had to deal with a large variety of diseases, both bacterial and non-bacterial in origin.[1]

The greater number of cultures was made on cases in which the clinical diagnosis was doubtful. In some instances confusing symptoms or signs, or evidence of intercurrent infection in known diseases, were the reasons for requesting a blood culture.

The clinical importance of blood cultures as an aid to diagnosis is demonstrated in several of the cases in this series. A general septicemia may present a classical picture or may be very confusing. It is in this latter group of cases that blood cultures will be of great aid to the clinician. In some diseases, as typhoid fever, a positive diagnosis can be made in a large per cent of cases some time before the Widal reaction is present or the clinical picture justifies a positive diagnosis.

In our work the following *technic* was used:

The flexor surface of the elbow was scrubbed with soap and water, washed in 70% alcohol, and a sterile dressing applied.

In cleansing the hands of the operator, soap, water and alcohol were used. An ordinary anti-toxin syringe was found to be the most serviceable for removing the blood. Care was taken to have sharp needles which had been tested before the culture was made, to be sure they were patent. Twenty centimeters of blood were removed, generally from the median cephalic vein.

The media employed as routine have been plain and dextrose agar, plain bouillon in flasks, litmus milk in flasks and serum waters. In cases where the clinical symptoms suggested some particular infecting organism, special media were used.

We feel sure, from our experience, that more blood cultures will be positive if the media used in each case are those most suitable to the growth of the supposed infecting organism.

All the media were inoculated at the bedside. The amount of blood added to each portion of medium varied. Where the symptoms suggested infection due to the colon group, a small amount of blood was added to a large amount of medium. In all cases a small sterile test tube was filled with blood and kept on ice for agglutination tests.

Anaërobic cultures were made only in cases where the bacillus aërogenes capsulatus was found in local lesions.

As routine, but one blood culture was taken from each case, but in some instances several were made. In a certain number of cases positive findings were obtained only after two or more attempts; in other cases, organisms were repeatedly recovered from the circulating blood. In this latter group of cases each successive blood culture showed the same organism as was recovered from the first.

Repeated blood cultures are of especial importance in cases where the common skin cocci have been obtained from the blood cultures in sufficient numbers to suggest a septicemia caused by these organisms. Such a case can hardly be reported as positive, unless the same organism has been present in at least two cultures taken from the blood at different times, or post-mortem findings show lesions unmistakenly produced by these organisms.

In the identification of organisms sub-cultures were made. The growth on the media used at the time a blood culture is made may be very suggestive, but in many cases it is not sufficiently conclusive to make a positive identification of an organism.

We used the inulin test in the differentiation of the pneumococci and streptococci. Those cocci in pairs or chains with cultural characteristics resembling streptococci, which showed no capsule and did not split inulin bouillon we called streptococci. If such an organism showed a capsule or split inulin bouillon, we called it pneumococcus. The staining of capsules of pneumococci grown on artificial media was not very satisfactory.

Cocci which grew in groups were planted on various media and their cultural characteristics studied. In all of these cases the cultures were grown in the thermostat, usually over night, and later at room temperature, in order to increase any pigment formation. Welch [2] has emphasized the importance of this point.

It is the custom of the Pathological Laboratory of the Boston City Hospital to report a culture negative only when the inoculated medium shows no growth after at least seventy-two hours incubation in the thermostat at 37° C. This prevents overlooking organisms which grow slowly. Even a longer time is necessary for some organisms, such as the tubercle bacilli.

After twelve hours all the inoculated media are examined. Those which show growth are studied. All colonies that have developed on the plates are surrounded by a pencil mark made upon the bottom of the plate. At the end of another twelve hours in the thermostat all new colonies are enclosed within a square made in like manner upon the bottom of the plate. This enables one to keep separate, colonies which have developed early from those which have developed

[1] For literature on blood cultures see:
Bertelsmann: Allegemeineninfektion bei chirurgischen Krankheiten. Deut. Zeitschr. für Chir., 1904, vol. 72, p. 209.
Libman, E., in the Johns Hopkins Hospital Bulletin, 1906, vol. xvii, p. 215, has covered the literature bearing on special features illustrated in his 700 to 750 blood cultures.

[2] Am. Jour. Med. Sc., vol. cii, 1891, p. 439.

late. Such a procedure is especially useful in cases where two or more organisms are present in the circulating blood.

The contaminator most frequently met with was the staphylococcus epidermidis albus. While it is difficult to prevent an occasional contamination with a colony of this organism, thorough sterilization of the patient's skin lowers its frequency. The cases in which we found it oftenest were those where some difficulty had been met with in entering the vein, necessitating more or less manipulation of the seat of puncture. In our cases all contaminating organisms were thoroughly worked out.

But one culture showed more than one organism present in the circulating blood — a case of septicemia following an abortion. From this case the staphylococcus pyogenes aureus and staphylococcus pyogenes albus were isolated.

In several cases one organism was isolated from the blood and one or more different pathogenic organisms recovered from local lesions in the same case. These associated organisms were found in local lesions present at the time of the culture from the blood or developed later in the course of the disease.

Only a small per cent of the fatal cases came to autopsy. Later in this paper we compare the ante-mortem and post-mortem findings.

Of the 91 blood cultures taken, 36 were positive and 55 negative.

The following organisms were recovered[3]: streptococcus pyogenes in 13 cases; pneumococcus in 6 cases; staphylococcus pyogenes aureus in 7 cases; gonococcus in 2 cases; staphylococcus pyogenes albus in 2 cases; bacillus mallei in 1 case; bacillus mucosus capsulatus in 1 case; bacillus anthracis in 1 case; bacillus paratyphosus in 1 case; bacillus aërogenes capsulatus in 1 case; staphylococcus citreus in 1 case; bacillus typhosus in 1 case.[4]

Of the 13 positive cultures of streptococcus pyogenes, 5 were recovered from patients on the surgical services, 6 from patients on the medical services, and two from patients on the gynecological service. Eight patients died; 5 recovered. Five deaths and 1 recovery occurred in cases from the medical services; 3 deaths and 2 recoveries in the cases from the surgical services. Both of the patients on the gynecological service recovered.

The surgical cases included:

1. One compound fracture; death; no autopsy.

2. Osteomyelitis with multiple abscesses; recovery.

3. Septic arm (cause unknown) with later involvement of one knee. On the day of the blood culture an evacuated abscess showed an organism which morphologically and culturally strongly resembled the pneumococcus. Recovery.

4. Traumatic amputation of the leg; death; no autopsy.

5. Multiple acute osteomyelitis with acetonuria; death; no autopsy.

The case of multiple acute osteomyelitis with acetonuria is interesting from the presence of the staphylococcus pyogenes aureus in two of the infected bones and the streptococcus pyogenes in another. This patient, a girl twelve years old, entered the third surgical service April 4, 1904. For a week she had complained of pain in her right knee and had had some fever. The lower end of the right femur was operated upon for acute osteomyelitis on April 6. A pure culture of staphylococcus pyogenes aureus was obtained from the pus. The upper end of the left humerus was trephined for acute osteomyelitis on April 8. The pus showed a pure culture of staphylococcus pyogenes aureus. The left tibia became involved, and was opened on April 13. A mixed culture of streptococcus pyogenes and staphylococcus pyogenes albus was obtained. Two days after this, a blood culture showed a pure growth of streptococcus pyogenes. In the latter part of the patient's illness, acetone appeared in the urine. Two days later diacetic acid was present. These substances gradually increased in amount, varying somewhat from day to day, until death. During the last three days of life there was marked vomiting.

Two surgical patients recovered. One had multiple subcutaneous abscesses with osteomyelitis. This patient was operated upon six times during a period of eighteen days. From an abscess opened a few days previous to the blood culture, the staphylococcus pyogenes albus was recovered. The second case had multiple subcutaneous abscesses with a swollen and painful knee. This patient was operated upon four times during an illness of seventy-one days. From an abscess opened ten days before the blood culture was taken, a pure culture of an organism which morphologically and culturally corresponded to the pneumococcus was obtained. Five days after the blood culture, a local lesion over the shoulder showed streptococcus pyogenes.

There were 6 positive cases of streptococcus pyogenes from the medical services. Five of these died and one recovered.

There were 2 autopsies in this group of cases. In both instances the clinical diagnosis and blood culture finding were confirmed.

1. One case of tonsilitis and pharyngitis, with acute involvement of the glands of the neck. Recovery.

2. Four cases of malignant endocarditis. All died.

3. One case of septicemia without a clinically demonstrable point of entrance. Death.

From the gynecological service there were 2 positive cultures of streptococcus. Both recovered. One followed an abortion. In this case the streptococcus pyogenes was recovered in pure culture from the uterus.

The staphylococcus pyogenes aureus was recovered from 7 cases, six times in pure culture and once associated with the staphylococcus pyogenes albus. Six of these cases died. One

[3] Five of the blood cultures included in this list have been reported by Duval and Lewis, Jour. of Med. Research, vol. xiii, p. 513.

[4] We have done but few blood cultures on patients in whom a clinical diagnosis of typhoid fever has been made. Several of these later proved not to be typhoid fever.

upon whom a culture was taken a few days ago is still alive.

1. One case with septic wound of the knee, followed by acute inflammation of a joint of the forefinger. Pneumonia developed.

2. One case with severe pharyngitis followed by signs and symptoms of septicemia. There was marked jaundice.

3. One case of malignant endocarditis secondary to acute suppurative otitis media.

4. One case with meningeal symptoms developing three weeks after a blow on the head. From a post-mortem lumbar puncture, the staphylococcus pyogenes aureus and the pneumococcus were recovered.

5. One case of septicemia following an abortion.

The staphylococcus pyogenes aureus as a cause of post-partum septicemia is not very common.

6. One case of empyema, secondary to a lung abscess. A pneumonia and signs and symptoms of a brain abscess developed three days before death.

7. One case upon whom a clinical diagnosis of perinephritic abscess was made. The right testicle became involved, was opened and from the pus a pure culture of the staphylococcus pyogenes aureus was obtained. The blood culture was done the day following this operation. Focal lesions of the testicles in septicemia are uncommon. This patient is still in the hospital. He shows some improvement.

In the case of tonsilitis followed by marked jaundice, an autopsy was made. There were focal abscesses of the lung, spleen and liver and a few small subcutaneous collections of pus.

The gonococcus was isolated from 2 cases. Both recovered. In one there was a clinical diagnosis of gonorrheal arthritis; in the other of malignant endocarditis. Both patients showed acute gonorrheal urethral discharge.

The pneumococcus was recovered six times. In all these cases a clinical diagnosis of lobar pneumonia had been made. One was complicated by empyema.

Five of the cases from which the pneumococcus was recovered from the circulating blood died; one recovered.

The patient that recovered after a pneumococcic septicemia, a male, aged twenty-six years, showed a typical course of lobar pneumonia with crisis and uneventful convalescence. The blood culture was taken on the day of the crisis. It would scarcely seem possible that the disappearance of the organisms from the circulating blood could have been as rapid as the crisis. In such a case, it would have been interesting to have taken cultures on several successive days following the crisis, to determine how long the organisms remained in the circulating blood, after the temperature became normal. That pathogenic organisms can exist in the circulating blood, even in great numbers, without causing symptoms, is well illustrated in one of our cases, given later in detail, the one from which the bacillus mucosus capsulatus was recovered.

Two autopsies were made on this group of cases. In both there was extensive solidification of the lungs. In one case the pneumococcus was recovered from the lungs, liver, spleen and kidney. There is no record of cultures having been taken in the other case.

The staphylococcus pyogenes albus was recovered from 2 cases; once in pure culture and once associated with the staphylococcus pyogenes aureus. Both cases were fatal.

The case from which the pure culture was recovered had had acute articular rheumatism several times. We are unable to determine definitely the relation of the time of death to the time when this blood culture was taken, and are unwilling to consider this a positive finding. A positive culture obtained a few hours before death might represent agonal invasion.

Seven different organisms have been found but once:

Bacillus mallei, bacillus mucosus capsulatus, bacillus anthracis, bacillus paratyphosus, staphylococcus citreus, bacillus aërogenes capsulatus, bacillus typhosus.

The case from which the bacillus mallei was recovered gave the following history: Male, age, forty-nine years, hostler. Had been in contact with glandered horses. Present illness: Has been sick several days; chills, sweats and pain in chest.

Physical examination. — Signs of pneumonia. Skin shows an eruption consisting of macules, papules, vesicles and pustules, marked over face, chest and limbs, especially about knees and elbows. The right little finger and left small toe are swollen, and of a dark red color. The joints particularly seem affected. There are deep abscesses, showing little reaction, over the right thigh and anterior surface of both forearms. The patient's condition became progressively worse and death occurred five days after admission.

AUTOPSY FINDINGS.

Resolving pneumonia (right). Fibrinous pleurisy (right). Abscess of lung (right). Multiple subcutaneous abscesses. Pustular and papular skin lesions. Acute hemorrhagic leptomeningitis (right). Acute cellulitis of the scalp.

Cultures from abscess of lung, beneath scalp, and the abscesses over the arms and thigh showed the bacillus mallei mixed with the streptococcus pyogenes and the staphylococcus pyogenes aureus.

The bacillus mucosus capsulatus was isolated from a male, aged thirty-seven years, cigar maker.

Past history. — Unimportant.

Present illness. — For two weeks he has had severe general body pain with tendency to localization in joints. Right leg has been especially painful for two days.

Physical examination. — On entrance the right leg was markedly swollen and cyanotic. Pitted on pressure. There was a diffuse purpuric mottling over whole leg without any sharp lines of demarcation. Forty-eight hours later condition

extended to axilla on that side. After five days local symptoms on right side gradually decreased. At same time the left leg began to swell, repeating completely the changes gone through on the right. Recovery was gradual and uninterrupted. The patient was discharged after five weeks.

On three occasions a blood culture showed the bacillus mucosus capsulatus in pure culture and in enormous numbers. At each time the number had increased. The last culture was taken on the day of discharge, five weeks after admission and four weeks since the previous blood culture.

The bacillus anthracis was isolated from a male; freight handler working on imported hides. He cut his chin on Nov. 13, 1904, while shaving. By Nov. 16, 1904, a small crust had formed at the site of the wound. This patient showed the typical pustule with corresponding general symptoms. A blood culture taken at the time of operation, when the pustule was excised, showed a pure growth of bacillus anthracis. After three weeks the patient was discharged well.

The patient from whom the bacillus paratyphosus was recovered gave the following history: Woman, single. Age, twenty-three years. Entered the gynecological service, June 25, 1904. For the past year she had complained of pelvic pains. Recently pelvic sinuses developed.

Present illness. — Twelve days before entrance, at her regular catamenia, she began to have pain in her left lower abdominal quadrant. This has continued with an occasional chill, some vomiting and fever.

Physical examination. — Negative except for tenderness in lower left abdominal quadrant and pelvic condition.

The pelvic condition was treated and improved. The temperature remained high with morning and evening variations. The Widal reaction was negative. No rose spots.

Fifteen days after entrance a blood culture showed a pure growth of the bacillus paratyphosus. This organism was completely agglutinated by the patient's blood, in dilutions as high as 1 in 500, with slight clumping up to 1 to 1,000. The bacillus typhosus was not agglutinated. Thirty days after entrance, this patient was discharged relieved.

The staphylococcus citreus was recovered from a gynecological patient who had acute pelvic inflammation, with foul discharge from the vagina. Vaginal section showed a pelvic abscess. She ran a septic temperature and died twenty-five days after the blood culture was taken.

An autopsy showed chronic salpingitis, abscess of ovary, pelvic peritonitis.

Cultures from the heart's blood were sterile.

The bacillus aërogenes capsulatus was isolated from the circulating blood of a woman who entered the gynecological service, Aug. 21, 1906. She gave the following history: Age, thirty-four years.

Past history. — Unimportant.

Present illness. — Two days previous to entrance she had a self-induced abortion.

Physical examination. — An obese, well developed female. Some general dusky hue of the skin. Restless. Temperature 105°, pulse 110. A small mass of placental remains was removed from the vagina.

The general bluish discoloration rapidly increased in intensity, becoming very prominent. Subcutaneous emphysema developed in the groins and inner side of the thighs. The patient rapidly failed and died twenty-four hours after admission.

Smears made at the time of entrance, from a swab from the uterine cavity, showed organisms which morphologically corresponded with the bacillus aërogenes capsulatus, along with a few cocci and a few Gram-negative bacilli. From cultures made from this same swab the bacillus aërogenes capsulatus was recovered.

A blood culture was taken eighteen hours before death. Anaërobic cultures were made and in addition a few drops of fresh blood were injected into the ear vein of a rabbit. The rabbit was killed in two minutes and placed in the thermostat at 37° C. for eight hours. From both sources the bacillus aërogenes capsulatus was recovered in pure culture.

An autopsy on this patient showed the typical lesions caused by bacillus aërogenes capsulatus, foamy liver, etc. This organism was recovered from the liver and heart's blood.

The negative blood cultures cover a long list of clinical diagnoses. Some of these clinical diagnoses proved to be incorrect, and some remained doubtful. Some blood cultures were taken from cases in which, later, the symptoms were proved to be of non-bacterial origin. In a certain number of cases, clinical observation has left little doubt that we were dealing with a septicemia; a few cases strongly suggested infection due to a particular organism. Negative blood cultures on cases where the symptoms strongly suggested a septicemia might have been due to any one of three causes: improper media were used; the culture was not taken during the acute stage of the disease; or there were too few organisms in the circulating blood.

In such a group of cases, only repeated blood cultures or post-mortem examinations would do much toward clearing them up.

Nineteen of the 55 patients showing negative cultures died. Autopsies were made on 2 of them; one a case of tetanus, the other a case of septicemia following a pelvic abscess.

SUMMARY AND CONCLUSIONS.

In this list of 91 blood cultures, 55 were negative, 36 positive. Forty-three patients died; 47 patients recovered; one is still in the hospital. Of those who died, 24 patients showed positive cultures, 19 patients showed negative cultures. Eleven patients showing positive cultures recovered and 1 patient is still in the hospital, improving. Thirty-six cases showing negative cultures have recovered. Autopsies were made on 8 positive cases and on 2 negative cases. From 5 of the positive cases with autopsies the same organisms were recovered post-mortem as from

the blood culture. In 2 cases there is no record of post-mortem bacteriological examination.

In comparing organisms recovered post-mortem with those obtained during life, agonal and post-mortem invasion must be considered.

We wish to emphasize the importance of repeated blood cultures in cases which clinically suggest septicemia, although one or more cultures from the blood have shown no organism.

THE EFFECT OF FLORIDA CLIMATE UPON ACUTE AND CHRONIC DISEASE.*

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THE varieties of climate which the different parts of Florida offer during the winter months are surprisingly diverse in a locality so nearly approaching tropical conditions.

Until recent years the southern portion of the state has been practically unknown, northern and central Florida alone having been enjoyed as a winter resort.

The climate of the Northern Atlantic coast of Florida is represented by that of St. Augustine and Ormond. In the former the winters vary with successive seasons but there are many bright, beautiful and sunny days during the least salubrious months, January and February. This northern region, however, is subject to occasional passages of cold waves which, coming from the northwest, sweep over Texas and across the Gulf and point their central force towards this part of the state. In recent years attacks of cold and frost have been more severe than for many previous decades. During such attacks warm clothing is required and hotels are supplied with steam heat and comfortable accommodations. These waves of cold usually continue for three days, followed by fair, sunny weather. The climate of St. Augustine and Ormond is not dry, nor is that of Florida in any part. It is classified as of medium humidity. Both localities are surrounded by salt water, and fresh water is not to be found in their vicinity. Neither has suffered from malaria, and the drainage of the hotels and large boarding houses in both of these resorts is as perfect as science and careful engineering can make them.

St. Augustine stands upon a neck of land surrounded by the waters of the sea; to the eastward stretches the Atlantic; to the west rise high sand ridges covered with a growth of healthy pine. It is separated from the sea by a narrow island, many miles in length, forming its harbor.

St. Augustine has an ancient renown for healthfulness. Bernard Romans, in the "Natural History of East and West Florida," 1775, writes: "I do not think that on all the continents there is a more healthy spot." Wm. Darby, "History of Florida," 1821, says: "The remarkable healthfulness of the situation will render it the Montpellier, of the Atlantic Coast." James Grant Forbes, in "Sketches of Florida," 1821, adds: "Accounts from all quarters correspond in representing the capital (St. Augustine) as the Montpellier of North America, to which the healthy repair for refreshment, the invalid for health."

In "Observations upon the Floridas," by Chas. Vignoles, 1815, is written: "The undeviating salubrity of the St. Augustine climate is almost one continued spring."

In 1837, John Lee Williams, in "The Territory of Florida," says: "The situation is peculiarly serene, healthy and pleasant."

George R. Fairbanks, "History of St. Augustine," 1858, confirms these statements, *viz.*: "The Spanish settlement of St. Augustine has remained for nearly three hundred years where it was originally planted, and the health of its inhabitants has for this long period given it a deserved reputation for salubrity and exemption from disease," "a situation combining more local advantages for salubrity could hardly be imagined."

This history of remarkable healthfulness continued until the spring of 1902, when an outbreak of typhoid fever occurred, embracing but a very small proportion of the large number who visited the city that season, but all attacked were persons of prominence, and their names were widely spoken.

Of these cases, Dr. John S. Billings, who the same season made a thorough, official investigation, reports: "It is probable that two or three of them were not typhoid at all, that two of them were ill on the day of their arrival, which illness became well marked typhoid five days later and, therefore, was not contracted at St. Augustine, and that of all the cases at the above mentioned hotels [Ponce de Leon and Cordova and Alcazar] there were among the guests but three which it would seem must have been contracted during their stay in St. Augustine. The four servants affected with typhoid probably had the specific cause introduced into their bodies through contact with a fever case or cases or with soiled linen from such case."

"Every educated physician will understand from the above figures the extreme improbability that so few cases (13) scattered over a period of two months and giving a ratio of less than one to a thousand people exposed, could have been due to anything in the structure of the buildings, the general water supply or the food, milk or ice, and the detailed investigation of all these things makes it practically certain that no case of typhoid was due to any of them."

Later history has borne out the correctness of Dr. Billings's opinion; during subsequent winters in my own experience until 1898, and since that time in the experience of Dr. M. W. Seagears, rarely has a case of typhoid appeared at St. Augustine. This northern region of Florida has, however, suffered for short periods in recent years more than the southern part of the state, from mild influenza. This disease, which attacked Florida but lightly, during its earlier invasion of

*Read before the American Climatological Association, May 5, 1907.

this country, came during the winter of 1900 with the onset of cold northwestern waves, in an active form. It was delayed until early March and persisted for two weeks. It was not accompanied by serious complications, but was characteristically epidemic. Scarcely a season since has northern Florida been free from some definite signs of its presence.

The exanthemata, when imported, have in my experience run an extremely mild course. In May, 1893, a mild epidemic of scarlatina occurred among the resident people, after the winter visitors had departed, but it was so indefinite that it was with difficulty recognized. No children suffered complications, none were kept in bed, and it was not until desquamation defined the diagnosis that the physicians then remaining in the city were able to give a positive opinion.

March and April at St. Augustine are most perfect months; bright, sunny days, with temperature rising to 70° to 75° and without evening chill, are almost continuous. This agreeable condition is equally true of Ormond and Daytona, and the choice of winter location may be determined by the fancy and pleasure of the patient rather than by any large differences in climatic conditions.

Of the more tropical portions of Florida, Palm Beach and Miami are the representatives on the eastern coast; on the west or Gulf coast, and in the interior, numerous points of comfort with proper appointments for health, have developed.

Palm Beach is situated at the most eastern point on the Florida coast, is bathed by the waters of the Gulf Stream, and is free from contamination of fresh or brackish water. The vegetation, though rich and beautiful, is not dense. Both Palm Beach and Miami are usually below the frost line. In 1899 the temperature fell once at the former to 33°, in 1906 once to 25°, and in 1907 to 28°. This region feels the effects of waves of cold borne down from the northwest much more mildly and for shorter periods than the higher latitudes of the state, yet there are days in January and February when an overcoat is necessary and when hotels turn on the steam heat. During each season there are at least three or four cold waves, as shown in the accompanying tabulation, sufficiently severe to render warm clothing and careful protection of the delicate, imperative.

These attacks of cold break, usually, on the middle of the third day and the normally mild climatic conditions are restored the moment Boreas ceases his attack.

The prevailing winds in southern Florida are southeasterly, directly off the ocean, a gentle, steady breeze during the entire day and lasting through the night.

Decidedly the most favorable feature for the delicate is the absence of evening chill. With the setting of the sun comes no appreciable fall in temperature, and in this the climate has an advantage over southern California, the upper Nile and the Riviera.

Sparks, writing of the Riviera, says: "The chief drawback to the climate is the occasional occurrence of winds, cold from the northeast and east, very dry from the west and northwest, and of periodic droughts."

At Nice, San Remo and Mentone, it is the custom of physicians during the winter months to recommend both well and ill to remain indoors after 3 o'clock in the afternoon until the setting of the sun, in order to avoid the chill damp which rolls down the lofty mountains at whose base they lie.

The best test of a climate is the healthfulness of the employees of hotels and grounds. These are imported persons, they work hard and take plain food, their habits are careless and they are constantly out in the night air. If malarial infection were present, it should manifest itself first among these employees. Of more than a thousand under my care during each of six years, I can say that in only a single instance have I seen a chill from any cause, nor have I seen a case of dysentery in any of them for that period. Among guests I saw an annual average of one case of dysentery.

I saw in 1899 one case of malaria among guests, a Yale student in reduced health. Under the usual medication the symptom never recurred; he spent his days at golf and sailing, recovered health, vigor and strength, and gained 11 lb. during his six weeks' stay. In the winters of 1900–1904 my experience with employees was exactly similar, neither malaria nor dysentery manifested themselves in any form; among guests two cases of malaria occurred in persons bearing a history of infection, a chill in each, once, and not repeated. No case of dysentery was observed in this period.

Among a very large number of children spending a part or the whole of the winter at Palm Beach, I had little occasion for practice. They were all, barring minor complaints and one case of bronchopneumonia, in good health during these winters. One case of pneumonia and one of diphtheria were imported, ill on the day of arrival.

The climate and sanitation of Miami is similar to that of Palm Beach. The choice will depend upon social and economic reasons, rather than upon any considerable atmospheric differences which may exist.

In this connection, I may say one word of the Island of Nassau, easily reached from Miami. I can speak of it with favor because of the uniform verdict of many friends and patients who have had long experience there. Cold waves are scarcely noticed. Temperatures are more uniform than in any part of Florida; drainage and sanitation are perfect, and the inviting atmosphere of the place, its unique and peculiar native life, its attractive sailing grounds and its excellent hotel and boarding accommodations, render it charming to the tourist and health seeker. The objections for invalids, to which my attention has been called, are occasional rough voyages, rather persistent stiff breezes which blow across the island with a velocity greater than at any Florida resort and the glare from the white rock

used in the construction of buildings and road beds.

Throughout Florida acute digestive derangements occur rather frequently in recent arrivals, partly by reason of the radical change from winter to summer, made in the interval of twenty-four to forty-eight hours (unlike nature's birds of passage), producing a state equivalent to the spring lassitude or so-called biliousness of northern May and June; in part also on account of dietetic indiscretions incident to a hotel table. Persistent diarrheas, excepting occasionally with the very aged, I have rarely seen. Acute intestinal disturbances, as the season advances to the warmer days of March, are not uncommon. Repeated investigation of food and water supplies have convinced me that these are not the cause. Attacks of mild diarrhea supervene on hot waves, just as they appear in the New England mountains and along the Atlantic seacoast in latter summer and early autumn. Colitis attacks are extremely rare, vastly less so than on the Maine coast in early autumn.

In 1897, I made a report before this society on pneumonia in Florida, for a period of five years. Among about 400,000 white and colored inhabitants, the average annual number of deaths from pneumonia was 165.4 or .42 per 1,000 inhabitants. In the east coast counties, from St. Augustine southward, the mortality was 1 to each 3,576, or .27 per 1,000 inhabitants. That this remarkably low mortality from pneumonia in Florida must be credited to favorable local climate, is more readily appreciated when we reflect that the average mortality is 1.5 per 1,000 in northern and temperate latitudes of Europe and America; that Greece, Italy and Turkey suffer severely; that the disease is often epidemic in sub-tropical and tropical countries like the Sudan, the west coast of Africa, and the upper Nile, and that in the West Indies and South American countries the natives have a very heavy death-rate from this disease.

It is manifest from the foregoing that there is little fear of serious acute illness by winter residents of Florida.

The improving effects of Florida climate upon chronic disease is greater than that of sea level in summer at the north, by reason of almost continuous sunshine, absence of evening chill and the slighter diurnal temperature variations. Diseases of the circulatory and excretory systems find here specially favorable conditions, particularly those forms dependent upon arteriosclerosis, local or general. Cardiac excitement is relieved and arterial hypertension receives some reduction. I have not infrequently seen cases of albuminuria greatly benefited by prolonged residence in Florida, and occasionally incipient subjects have returned to perfectly normal conditions.

Functional nervous diseases, whether dependent upon presenile sclerosis of blood vessels or upon the stress and strain of modern life, are favorable subjects for this sedative climate. The stimulus to mental activity is removed, and persons even in perfect health note a decided soporific influence. Respiratory diseases, if catarrhal or delayed convalescent from pneumonia or bronchitis, as well as cases of tuberculosis in the inactive fibroid stage, can find no more advantageous winter home.

Acute stages of pulmonary tuberculosis do not receive, in my experience, the advantage which might be anticipated from the out-of-door treatment in this climate. I have in many instances known of great improvement or recovery in persons whom I have directed from Florida to the more invigorating climates of mountain regions or to southern California, other conditions remaining practically unchanged.

Gouty and rheumatic subjects, with incident neuralgias or neurites, have frequently and rapidly improved under my observation in this greatly eliminative atmosphere.

To what extent our families, sent to Florida, are exposed to acute and climatic diseases, twenty years of personal experience make it possible for me to state with reasonable accuracy. That this sub-tropical sea climate has also definite influence in delaying the progress of already established chronic disease, I cannot doubt, and in certain border-line cases, as in albuminuria, definite cures have been accomplished. The objections to winter residence in Florida, which should be noted, are hotel and boarding-house life and food, which can rarely be equal to home surroundings and table, absence of sustained diversion for such as do not take up golf or tennis, and who are indifferent to sailing and fishing. Sitting out of doors and wheel chair or carriage driving soon cease to be an amusement to the average restless American mind.

One other objection, which to a small proportion is an important one, is the relaxation, the so-called enervating effect of the climate. In some persons, well or ill, this becomes a positive torpidity, physical and mental, with painful languor and lassitude, simulating illness; to such the climate is not adapted and they should return to the bracing influence of northern chill.

The advantages of easy accessibility for residents of the eastern half of our continent, of freedom from the dangers of acute and climatic illness, as I have pointed out, and the toning down of the overworked and overwrought nerves of the average American, associated with its tendency to stimulate nature's restorative processes, are all that should be claimed for Florida's influence upon health and disease.

Climate of Palm Beach, Fla.

Temperature:[1]

	Jan.	Feb.	Mar.
Average for 18 years,	65.7°	67.1°	67.8°
Average daily range for 18 years,	14.3	13.3	13.5
Mean of warmest for 18 years,	72.2	71.6	73.7
Mean of coldest for 18 years,	60.0	58.4	64.8
Highest of maximum for 18 years,	83.0	87.0	89.0
Lowest of minimum for 18 years,	24.0	27.0	33.0
Average date of lowest for 18 years,	Dec. 29.		
Humidity, relative, for 18 years,	82.0	80.0	79.0

[1] Jupiter, seventeen miles north of Palm Beach, Coleman: Tr. Amer. Climat. Asso., xxii, 51.

CLIMATE OF PALM BEACH, FLA.

PERSONAL OBSERVATIONS.

Precipitation:	Jan.	Feb.	Mar.
Average in inches, 18 years,	3.81	2.78	5.2
Wind: Average velocity in miles per hour,	10.2	10.9	11.2
Average number cloudy days, 18 yrs.	6	5	5
Largest " " " " "	15	13	12
Smallest " " " " "	0	2	0
Average " rainy " " "	10	9	7
Smallest " " " " "	4	3	5

1898, Jan. 9 to March 26, 51 days:	
Minimum temperature (once),	50°
Highest " "	88°
At or above 80° in January,	10 days
" " " " " February,	7 "
" " " " " March,	14 "
" " " 70° " January,	14 "
" " " " " February	20 "
" " " " " March,	26 "
At or below 60° " January,	0 "
" " " " " February,	14 "
" " " " " March,	0 "
1899, Jan. 9 to April 3, 84 days:	
At or above 80° in January,	6 days
" " " " " February,	16 "
" " " " " March,	25 "
At or below 60° " January,	6 "
" " " " " February,	6 "
" " " " " March,	4 "
1898, number of days with temperature range between 60° and 80°,	51 "
1899, number of days with temperature range between 60° and 80°,	42 "

A STUDY OF FIFTY-ONE CASES OF DEBILITY IN JEWISH PATIENTS.

FROM THE OUT-PATIENT DEPARTMENT, MASSACHUSETTS GENERAL HOSPITAL.

BY H. MORRISON,
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THE term "Hebraic debility" has been used for some time at the Massachusetts General Hospital to designate the condition of many of the Jewish patients coming to the clinics. These patients complain of "burning" and "sticking" pain, generally in the chest and epigastrium, but often all over the body. "*Es brennt mich*," "*es stecht mich*," and "*schmerzen überall*" are familiar expressions in their stories. The history of one of these patients has been summed up as follows: "She complains of backache and everything else." One of the physicians at the hospital was inclined to think that such symptoms were peculiar to Jews, that they were more than mere neurasthenic symptoms, and he suggested that I should study these patients by visiting them at their homes so as to get the details of their ailments and observe their modes of living.

MOST OF THESE PATIENTS ARE RECENT IMMIGRANTS. ALMOST ALL GET WELL.

I have studied 51 cases, confining myself to those in which the diagnosis of "Debility" or "Hebraic debility" had been made at the Massachusetts General Hospital. Almost all the persons whom I visited are recent immigrants, 44 from Russia and 4 from Austria-Hungary; all of limited means, several very poor; none having much education, some illiterate; the large majority, 39, living in the North and West ends of Boston.

One of my earliest impressions in this study was that, with the exception of one, none of these people — and 38 of them were women — was sick when I made my visits. In fact, 24 declared themselves perfectly well at that time. All were engaged in their usual activities. Thus I found one of these women hoeing the little garden in front of her house, — she was living in Malden. One of the men, who up to recently had been a frequent visitor at the hospital, I found cleaning up his grocery store; he is a cigar maker, and works at his trade all the week, helping his wife in the store on Sundays and in the evenings. Some, even, had to be reminded that they had ever been at the hospital, and it was only on questioning that I got their various complaints.

THE PREVALENT SYMPTOMS ARE PAIN, CONSTIPATION, AND APPREHENSION.

I have attempted in the accompanying table to give the symptoms somewhat in detail. Here I wish to emphasize three of them, — pain, constipation and apprehension. Of the 51 cases seen, only 7 did not mention pain. In more than half the number, the pain was located in the chest or epigastrium; a lesser number complained of headache or backache; a still lesser number of pain in the extremities or rheumatic pains; 12 spoke of pain "all over."

I found, however, that the term "pain" is used very loosely, especially by these Jewish people. Not only is their English vocabulary very limited, — 19 did not speak any English at all, — but their Yiddish is also very narrow. Thus pain may mean mere discomfort or distress, irritation or pressure, paresthesia or hyperesthesia. Even in their own language they misinterpret their sensations, more so when they have to express themselves in English. It has been supposed by some that the adjectives "*brennend*" and "*stechend*" are peculiar to the symptoms of these Jewish patients, that people of other races do not describe their pain sensations in such terms. I find, however, that they are used idiomatically in Yiddish. Moreover, I have heard not infrequently others than Jews describe their sensations of pain as "burning" or "cutting." Another error due to misinterpretation comes in the localization of the pain. The great majority of these patients speak of "pain in the heart," — "*es brennt mich, es stecht mich ins Herzen.*" Often this may be translated literally into "heartburn." Much more frequently, however, the term "heart" covers a larger region, including the whole chest and upper abdomen.

Constipation is very prevalent among these people, and I consider it, because of the pressure which it causes on the diaphragm and on the viscera, an important immediate factor in the etiology of their "pain" sensations. It was a symptom in at least 37 of the 51 cases. With the older ones it has been a matter of long standing; with the younger ones it has dated since their coming to this country. In the case of the

latter, it is due, of course, to the separation from home privileges and to the introduction to the sedentary habits incidental to employment in factories or stores. A typical story is that of one young married woman: "I was as strong and ruddy, when I came here, as all Russian girls are, but I lived with strangers, and worked from morning till night in a poorly lighted and poorly ventilated shop, with only a small, dry lunch for my mid-day meal. I soon began to grow weak; my eyes became dim, and my head commenced to ache, my teeth grew poor, and since then I have had stomach trouble." This constipation must be considered, however, not only as due to sedentary occupations and irregular habits, but also as a phase of the general muscular hypotonicity which has become characteristic of the Jewish people during the ages of persecution. It is presumably the same diminished muscle tone, causing displacement of the visceral organs and loosening of the ligaments of the extremities, in people who, during ages of extreme nervous tension, have developed an intense sensitiveness that accounts for many of the vague and diffuse "pain" sensations so common among Jewish patients.

I wish next to call attention to the element of apprehension which is very prevalent among these patients. Definitely I found that 14 of the 51 persons I saw, feared that they were suffering from cancer, consumption or heart disease. One woman told me that she heard people talk so much about consumption that she got it into her head that she also was suffering from it. Another, whose mother had died of cancer the year before, was very sure that the pain in her left side was also due to a new growth. Still another had on the day previous to my visiting her been to see one of the most prominent physicians in the city about her heart; she had already been to about all the clinics in Boston, and everywhere was assured that her heart was all right, but she thought that the doctors would always talk differently among themselves about her; this physician had also reassured her, and prescribed a laxative; still she believes that there is something wrong with her heart. To several of these people complaining of "pain in the heart" I put the question, "Would the pain bother you as much if it were in your little toe instead of your heart?" and in some cases I got the prompt reply, "Of course not; the heart is so much more important than the toe." The Jews, always a highly imaginative people, have been for centuries cradled in fear, so that it has become one of their keenest emotions, provoked by trifles.

THE ECONOMIC LIFE IN AMERICA IS MORE STRENUOUS THAN IN RUSSIA.

As to the duration of these ailments, I found that with 14 of the persons seen their symptoms came on before their coming to this country, and of these, half have felt worse since, while with 34 they came on in America. This is to be expected, considering the stress and strain incidental to establishing oneself in a strange land. In the accompanying table I try to compare in a way the modes of living of these people here in America and in Russia. Though the figures show that in the old country half of the persons under consideration lived in small towns and only less than half in cities, I wish to point out that essentially they were all city dwellers. In the small town as well as in the city in Russia the Jews live under crowded conditions, and are employed in sedentary occupations. On the whole, I believe that when they come to the American cities they do not live in a more crowded condition, at least as far as the number of persons per room is concerned, than in their old homes. The weather in Russia is much more equable than here, but I was rarely told by any one that the change affected him or her. The patient's industrial life, however, especially during the early years after arrival, is lived under much greater strain here than in Europe, for though the income is increased, the standard of necessities is raised out of proportion to income.

This strain weighs especially on the Jewish woman, for here as well as in Russia she very frequently has to share with her husband the burden of supporting the family. In my series of cases 7 of the women were the sole supporters of their families. It is rare here in America that a Jewish girl is at home not working, a thing not at all unusual in Russia. Married women help along by keeping boarders, or by working shoulder to shoulder with their husbands in business, aside from their household duties. Many a home in the North and West Ends is to be found in the rear of stores. One woman living under these conditions told me that she was up from seven in the morning till one at night, running back and forth from the kitchen to the store, — it was a little lunch room. Another of these women I found, when I came to see her, had been out collecting bills, — her husband keeps a grocery store, — the whole of a cold winter afternoon, though she was pregnant and quite miserable.

IRREGULAR HABITS, IMITATION, TRADITION AND THE GREAT NUMBER OF HOSPITALS ARE FACTORS IN THE ETIOLOGY OF THESE DEBILITIES.

Of course, one is not to look for regular habits under such circumstances. Meals are had at any time, and are never given a reasonable length of time. Those who work in factories either get home to swallow their dinners in the few minutes that they have, or else eat a dry meal in the shop. As for food I have observed that much more meat is eaten here than in Russia, and less fat. Tea is taken in moderation, less than in Russia; but more coffee is used here. Alcohol is not a factor.

Of recreation there is little either here or in Russia, — on the whole more here, though in Russia the Sabbath is much more a day of rest. Of the 51 persons seen, only 5 had had a vacation regularly for several years; 5 had had it only once. One young man who keeps a candy store in East Boston had had a two weeks' vacation the

summer before, but when he got back he had so much to do that he thought he had lost more than he gained, and said he would think twice before going again. With the majority the only change in the routine of life is the walk to and from work, the visit to the butcher's or grocer's, or the chat with the neighbors on the doorsteps.

As I have mentioned above, 38 of the 51 cases studied were women. Moreover, as far as my own experience goes, — and my experience has been chiefly with Russian Jews, — as well as that of many that I have questioned on this subject, almost all married Jewish women, whether of the hospital class or not, some time or other get into a debilitated condition, and present symptoms similar to those of the cases here analyzed. They are temporary affairs, but recur; all due to the mode of living, exhaustion or worry. I have observed, however, that imitation and tradition play some part in the etiology of these debilities. The undercurrent of thought on this subject seems to be that from time immemorial women have been sick; it is a sort of privilege tolerated with them; it is even expected of them. "A woman keeps on dying all the week, but recovers on the Sabbath," and "A woman has ninety-nine souls," are two Jewish sayings which show that this feeling is deeply rooted. It is the subject for conversation when women get together; to be sick gives one a standing in such circles. Gradually it creeps into the young woman's subconsciousness, and she, too, begins to visit the doctor or the hospital.

I know, however, that the Jewish women in Russia do not complain as much as when they come here. They all boast of their strength and good health there, and of the amount of work they could do. The change is due, of course, to the strenuousness of the transitional period which they are living through. I wish to call attention to another factor, a minor one though it may be. One often hears of the great percentage of people seeking medical advice at the hospitals, but one seldom considers that many people seek medical advice *because there are hospitals.* In Russia the Jewish woman can hardly afford to consult a doctor for the least thing that ails her, and hospitals and dispensaries are very rare. In the American cities, on the other hand, it usually so happens that the large hospitals are situated in the very centers of the crowded districts, not to mention the many dispensaries and the lodge-doctor system. These help the Jewish woman to keep her attention on herself; she goes to the hospital or to her lodge-doctor for things which in her old home she had to overlook and forget.

THESE DEBILITIES ARE NOT PECULIARLY JEWISH.

My aim has been to bring out and emphasize several points which have become clearer by this study. Is there such a condition as *Hebraic* debility? Is there a debility peculiar to the Jewish people? I cannot think so. I admit that the symptoms considered are, in their grouping, expression and frequency, peculiar to the abnormal circumstances under which only a part of the Jewish people live or recently have lived. There is not, however, anything essentially Jewish or Hebraic about them; there is nothing that makes them different from neurasthenic symptoms in other races. According to the testimony of physicians who come in contact with the prosperous and educated Jews, removed from those circumstances, their patients do not present the symptoms so commonly seen among the Jews coming to the hospital clinics. The same is true of the second generation of the Russian Jewish immigrants.

The Jew is markedly neurasthenic, but as the French author, Leroy-Beaulieu, says, "It is not to be attributed to his Oriental origin or to a peculiar anatomical structure. The predominance in the Jew of the nervous system over the muscular system is due to the mode of his secluded living, to the conditions of his existence, to his sedentary and city life, with lack of physical exercise and weakening of the muscles, to the emotions and cares of the occupations carried on by his fathers. For centuries he has owed his existence more to his brain than to his arm. Even now in Russia he succeeds in maintaining a miserable existence only by a miraculous will and industry." Here in America the effect which migration has upon the nervous resources of the Jew must be considered, and at the present time, also, the effect of the atrocities committed upon his "flesh and blood" in Russia and other black spots on the map.

In the Shattuck Lecture of 1899, Prof. J. J. Putnam, says, "This or that American or Irishman or Jew cannot be treated to the best advantage so long as he is regarded solely as an individual. His racial traditions and temperament should be taken instinctively into account." Because of the failure to do so, it seems to me, the treatment of the class of patients considered in this paper, both in private and hospital practice, is as unsatisfactory as it is. When a woman comes complaining of pain in the side or back, or of headache, or of any other such symptom, it is not enough to say, "Oh, well! She is a neurasthenic. Give her Mixture X or Tablet Y." The patient so treated will keep on coming to the clinic for some time, and then go to another, and so on. The physician, especially with these Jewish patients, must learn to appreciate their natural history, their temperament and traditions, their modes of living and suffering, — in a word, to understand them. Such an appreciation will lead to sympathy rather than to repulsion, and instead of taking half a minute, he will take three or five, reassure his patient, gain her confidence, and instruct her to control her "pain" sensations and to correct her diet and habits. A patient so treated, no matter how dull or ignorant, will show results; once or twice at the hospital will be enough for her; besides, she will become a missionary to her circle of friends.

I have mentioned before that the second generation of Jewish immigrants, relieved from many of the abnormal circumstances under which the parents labored, quickly get away from the

tendency toward debility. Moreover, these young people very frequently bring light into the households of their parents. I know personally of many instances where the parents have learned to lead more rational and comfortable lives through the influence of their children. It is through these young people, trained in American institutions and ideals, that the differences between the many elements of the population are to be removed.

SUMMARY AND CONCLUSIONS.

1. Debility is a common condition among the Jewish patients coming to the Massachusetts General Hospital; as a rule it is temporary, but is apt to recur.

2. The prevalent symptoms are pain, constipation and apprehension.

3. The etiology of these debilitated conditions is to be traced to the peculiar circumstances under which the Jews have lived and still live in eastern Europe. Here in America the economic strain during the early years after arrival is an important factor.

4. Debility is especially common among the Jewish women of the immigrant class, because the economic strain weighs very heavily on them. With them, also, imitation and tradition and the ease with which medical advice can be obtained are factors to be considered.

5. These debilities are peculiar not to the Jew, but to the abnormal conditions under which he has been living. As soon as he is relieved from these conditions his symptoms are not different from those of other races.

6. Finally, in the treatment of the cases considered it is well to bear in mind the importance of the old sentiment, "not the disease only, but also the man."

ANALYSIS OF CASES.

Number of cases seen,	51
Males:	
Single,	4
Married,	9
Females:	
Single,	8
Married,	21
Widows,	9
Diagnosis made at the Massachusetts General Hospital:	
Debility,	38
Hebraic debility,	13
Birthplace:	
Russia,	43
Austria-Hungary,	4
United States,	3
England,	1
City,	14
Small town,	35
Symptoms:	
Pain,	
Chest,	24
Epigastrium,	11
Headache,	22
Backache,	6
Pain in the extremities,	9
Rheumatic pains,	5
Pain all over,	12
Constipation,	37
Apprehension:	
Cancer,	5
Consumption,	5
Heart disease,	4
Palpitation and shortness of breath,	12
Hysterical symptoms, as anesthesia, globus hystericus, etc.,	9
Menstrual disorders,	8
Onset of symptoms:	
In old country,	14
In the United States,	37
With beginning to work,	9
With removal from country to city,	3
With sickness or death in family,	7
With homesickness,	2
Home in	
Old country:	
City,	22
Small town,	26
America:	
Greater Boston,	51
West End,	33
North End,	6
Suburbs,	12
Average number of rooms per family,	3
Very poor homes,	11
Food in America:	
Meals irregular or hurried,	37
Poor appetite,	18
Dry mid-day meal in shop,	9
Meals at restaurant,	1
Tea or coffee to excess,	4
Tea or coffee in moderation,	29
Work in old country:	
In factory or shop,	9
In business,	11
Housework,	20
Worked harder than in America,	12
Work in America:	
In factory,	10
In store,	5
Peddlers,	3
Janitors,	2
Keep store,	3
Housework,	16
Housework and store or shop,	5
Work harder here than in old country,	33
Women supporting their families,	7
Families depending on charity,	2
Recreation:	
Vacation regularly,	5
Vacation occasionally,	9

Massachusetts General Hospital.

CLINICAL MEETING OF THE STAFF, NOV. 22, 1906.

I. TWO CASES OF EXCISION OF ADENO-CARCINOMA OF THE RECTUM, WITH PRESERVATION OF THE SPHINCTER.

II. CANCER OF PROSTATE. COMPLETE PROSTATECTOMY BY LORING'S METHOD.

III. DIVERTICULUM OF BLADDER. EXTRA-PERITONEAL REMOVAL WITH SUTURE.

BY C. A PORTER, M.D.

I. I WISH to show two cases of adeno-carcinoma of the rectum, at present alive and free from recurrence; one seven years, the other five years, after operation. The first case I reported here two years ago, and show him to-night because he still remains well, at the end of seven years. The other case is as follows:

Arthur Moore, age forty-four, living in East Everett, was admitted to the Massachusetts General Hospital, Dec. 1, 1902, to the service of Dr. C. B. Porter.

On entrance, urine was of normal color; acid reaction; specific gravity, 1,019; no albumin; no sugar. A month later (Jan. 8), urine the same with the exception that the specific gravity was 1,024.

Family history negative. He had always been well, and had worked hard. Many years previously had rheumatic fever, which was his only illness. He has had piles for twenty years, but they have never troubled him until about a year ago. Always been constipated. Denies venereal.

One year ago, piles began to itch and burn; bled frequently, and came down outside anus at every movement of the bowels; has used various salves without relief. Complains chiefly of bearing down in rectum, coming on before a movement of the bowels; also the annoyance which the piles cause him. No bad pain in rectum; no mucus or pus discharges; no loss of weight.

P. E. Poorly developed and nourished. Heart, lungs and abdomen negative. Rectal examination: on anterior wall of rectum, about three inches up from anus, is a soft, spongy tumor, irregular in outline, size of a small hen's egg. Few small glands in groin.

Operation, Dec. 4, 1902. C. A. Porter. Ether. Patient lying on abdomen, with thighs moderately flexed. Sphincter dilated; rectum irrigated with corrosive 1–1000, and salt solution.

Incision 9 cm. in length, extending along cleft of nates, into rectum. Sphincter cut; incision carried down to bone. Coccyx separated from soft parts with periosteum elevator, and removed with bone forceps. Incision carried around rectum mucous membranes, just above external sphincter, and carried through the walls to the perirectal tissue. Keeping in the blunt of cleavage, the rectum was separated and isolated for 12 cm. of its length. Walls of rectum were somewhat adherent to prostate, but were separated cleanly. Peritoneal fold of anterior wall of rectum was pushed backward and upward, and peritoneal cavity was not opened. Mucous membrane which was left covering sphincters was dissected off the cylinder of rectum, containing growth, and completely isolated, was cut away and removed; bleeding points tied. The incision was 2 cm. above its highest demonstrable limit of growth; one or two small perirectal glands were removed also. The divided end of the gut was then sewn to skin about margin of ends; this was done easily without undue stretching. The ends of the divided sphincters were approximated, thus encircling the transplanted gut very effectively. One silkworm stitch taken to close section wound. A drainage tube put down to the left of gut, and rubber dam to right. T. bandage.

Kraske operation (modified) for carcinoma recti.

Patient was breathing laboriously and had poor color throughout operation. Sent to ward in fair condition; shock enema.

Reported later for poor pulse, which was irregular and easily compressible, although of good volume.

Wound discharged very little; no pain or discomfort. Patient was unable to evacuate bladder completely, and the residual urine increased, so daily catheterization was resorted to.

Examination of 19th showed that sphincter grasped finger very strongly, but apparently voluntary nerves are cut, for patient has no control. Bowels are loose, and movements occurred without knowledge of patient.

Four months after operation, patient regained control of urine, and slowly regained control of sphincter ani. Was discharged Nov. 4, 1903; holds feces well for three to four days; sometimes a little blood comes away, but there is no pain. Examination of rectum shows scar wound, with no signs of recurrence.

An ulcerated infiltrating new growth about 4 cm. in diameter with a slightly papillary and infiltrating edge 5 cm. above rectum.

Microscopic examination. — Shows irregular glands which had infiltrated the submucous tissue and, in some places, apparently has solid masses of epithelial cells.

Adeno-carcinoma. Dr. Whitney.

In both of these cases, the sphincters have been preserved; both had an ulcerated adeno-carcinoma on the anterior wall of the rectum about 4–5 cm. in diameter. In the first case, an incision was made from the lower end of the sacrum down through the sphincter ani in the median line behind. The coccyx was removed. This incision was continued in the median line, through the posterior wall of the rectum, both edges of the wound being then widely retracted, disclosing the ulcer on the anterior wall. This was freely excised, and the tissues behind the prostate and about the vesical seminals cleaned out. This circular wound was then closed with buried catgut stitches, from above downwards. The posterior incision in the rectum was closed in the same manner, laterally, and the sphincter muscle sutured. A rubber tube was placed in the rectum, with posterior iodoform gauze drainage on either side. In the second case, the same incision was made down to the rectum. The sphincter was divided, and the rectum cut just above the internal sphincter. The rectal tube with surrounding fat tissue, was then freed and divided transversely an inch above growth. The upper end of the rectum was then brought down and sutured in a circular fashion, and the mucous membranes just above the internal sphincter. Both sphincters were then sutured; rubber tube in the rectum, and posterior gauze drainage as before.

In both cases there was some fecal leakage but the sinuses were closed in six weeks.

II. Patrick J. Kelley, aged fifty-one, residing in East Boston, was admitted to my service, July 26, 1907; recommended by Dr. Lincoln in the Genito-Urinary Department. His history is as follows: Denies venereal; moderately alcoholic; bowels costive; indigestion at times; has lost no weight. Well nourished muscular man. For several months has been troubled with frequency of micturition at night, which wakes him three to four times. Four weeks ago, had to pass urine frequently during the day with scalding sensation. Has never had pain other than on urination. Rectal examination shows small, indurated and nodular prostate; not tender. No glands by rectum; no glands in groin. Testicles and cord negative. Urine acid; no albumin; no sugar; specific gravity, 1,015.

Cystoscopic examination by Dr. Davis, July 25. "Kollman instrument introduced with considerable difficulty, requiring great depression of the handle. Some spasm of neck of bladder. Fundus trabeculated; whole floor of bladder ulcerated. Right lobe of prostate presents rounded tumor, size of marble, which runs off into a generally elevated surface, presenting little reddened excrescences suggesting a new growth. There is a black mass, about size of strawberry, which cannot be fully brought into view, and which moves from one part of the bladder to another. There was some hemorrhage. Ureteral openings not distinctly

seen. Diagnosis of incipient prostatic carcinoma made and radical removal advised. This diagnosis was concurred in by me from the rectal examination, owing to the nodular condition and the extreme hardness.

Operation, July 31, 1907. The patient in Trendelenberg lithotomy position. Horseshoe incision made in perineum and dissection made exposing the bulbous urethra and the prostatic lobes; considerable bleeding. An oblique incision was then made through the right lobe of the prostate, and a wedge-shaped piece given to the pathologist for examination. The report from the frozen section given to Dr. Kidner, and confirmed by Dr. Richardson, was probably carcinoma, and the radical operation decided upon.

A median incision was made just back of the membranous urethra and Young's retractor introduced. The prostate was pulled down with strong traction, and with scissors and blunt dissection, the surrounding structures were freed from the prostatic capsule. The bleeding was very troublesome, controlled by snaps and pressure. After the posterior and lateral parts were thoroughly freed, the urethra was divided at its membranous portion; the whole mass pulled downward, and with great difficulty and copious hemorrhage, the prostate was freed from its pubic attachments. The bladder was opened anteriorly, two strong silk sutures being inserted at the edge in order to prevent retraction. The base of the bladder was then divided with scissors, well behind the internal sphincter, and the vasa deferentia and two thirds of the vesical seminal removed "*en bloc*." A No. 12 English soft rubber catheter was then introduced through the urethra into the bladder, and with 00 chromic catgut sutures, the membranous urethra was sewed about it to the bladder, and the stem of the Y-shaped opening in the bladder closed in a similar fashion. This proved to be a very difficult manipulation, and the patient had to be lowered from the Trendelenberg position owing to the retraction of the bladder. A number of tension sutures were placed about one inch from the urethral suture, passing through the muscular walls of the bladder and posterior part of the pubic bone.

Iodoform wicks inserted by the side of the newly formed urethra, extending on either side into the pubic region.

Operation lasted for three hours, and the patient was put to bed, suffering both from shock and hemorrhage. The operation seemed to me both a very severe and a difficult one. Convalescence, however, was satisfactory. At the end of five days there was some sloughing of the fat tissue, and some leakage due to suture. The catheter remained in position forty days, at the end of which time, methylene blue showed no leakage in the perineal wound, which was almost closed. Patient was discharged Sept. 19, about two months after entrance.

The specimen consists of symmetrical prostate, 4.5 by 5 cm. in diameter; its two lobes being practically equal and not markedly lobulated. The capsule appears covering the whole mass. There is also a piece of the floor of the bladder about 2 by 2 cm. containing the internal meatus and the prostatic urethra. Behind appear the seminal vesicles, which are dense and thickened. Also the vasa deferentia, which are filled with muco-purulent fluid. Both these structures are greatly thickened, hard, and suggest malignant feel. On section, the prostate is unusually homogeneous in structure, although the minute glands can be made out, scattered all through the cut surface. The structure seems to be unusually cellular. The capsule is not markedly adherent to the prostate itself.

Microscopic examination through the prostate and capsule shows the glands to be everywhere extremely irregular and to be increased markedly in numbers. The muscle tissue is somewhat infiltrated with round cells, but not greatly changed. The whole increase in bulk is apparently in the number and size of these glands, some of which are clearly defined with firm basement membranes; these, however, at one point or another, entirely lose their basement membrane, and the cells can be seen growing freely in the muscular tissue, separated from any gland. All of the glands show marked hypertrophy, in the epithelial structures, many of them being noticeably papillomatous. As far as could be made out, however, the capsule is not infiltrated.

Section through the vasa afferentia and seminal vesicles shows again great increase in the epithelial lining of these structures. In places the mucous membranes seem to have broken through its basement membrane and to be infiltrating the muscular layers of the tissue.

Adeno-carcinoma of prostate.

Patient reported to me a week ago at my office. He can hold his water an hour and a half at night, but is incontinent during the daytime, wearing a urinal. There is a definite narrowing, admitting No. 24 French at the site of the suture. The urine shows slight cystitis. He has no pain; has gained weight and color.

Rectal examination shows in region of the left vesical some fullness, but no nodulation.

This case is interesting, I think, in two respects: first, because an attempt was made, by saving the membranous urethra, to restore partial continence. In the operation as planned by Young, the membranous urethra is removed. Up to the present time, however, this attempt has been unsuccessful. Second, the question of diagnosis and a choice of cases for this formidable operation. From my experience with this patient, and the few reported cases, it would seem an absolutely unjustifiable operation to do in case there was any reasonable doubt as to the presence of carcinoma. On going over other sections of this prostate, mounted in paraffin and more careful staining, there is at present some doubt whether cancer was actually present, but it is certain that there was an abnormal tendency for adenomatous tissue to be found in the surrounding tissues, suggesting at least the probability that adeno-carcinoma would develop, or might be found in other places on further section. In subsequent cases, I should advise enucleation of the gland, if the frozen sections did not show definite carcinoma, or the clinical signs were absolutely characteristic.

III. Hudson H. Smalley, aged thirty-four, entered Dr. Cabot's service in April, 1906, with the diagnosis of cystitis. Twelve years before, he began to have bladder trouble; frequently scalding micturition, often passing fragments of tissue size of a pea, and once a piece as large as palm of hand. He was treated at the Maine General Hospital for ulceration of bladder. Denies venereal.

At present he complains of passing both fresh and clotted blood with a bad odor. Has difficulty in starting stream; dribbles, and he feels that he never fully empties his bladder. He has frequency of urination every half hour or more during occasional attacks of cystitis. Appetite is good; bowels regular.

Bladder is full, extending to umbilicus; no fever. Urine: specific gravity, 1,015; slight trace of albumin; alkaline reaction. Sediment: some pus; bladder cells; triple phosphate crystals; numerous blood corpuscles, both normal and abnormal; many bacteria. Catheterized and 19 oz. of residual urine found. On the next day, residual urine 24 oz., and on the fourth day could not be catheterized on account of spasm. Decided to go home against advice.

Patient entered hospital again April 16, 1907; has lost weight and looks badly. Rectal examination shows prostate moderately enlarged; base of bladder uneven, tender, boggy and indurated. No. 11 English soft rubber catheter passed with some difficulty, drawing off 27 oz. ammoniacal urine. Patient put on constant drainage, and three days of such treatment cleaned up the urine somewhat, and patient was much more comfortable. Cystoscopy by Dr. Davis, who found three diverticula from the bladder, one large one extending from the left side of the base, backwards and downwards.

April 30. Operation by Dr. Mumford. Transverse incision above pubis; prevesical space opened; bladder wall thickened and friable; opened and a quantity of foul smelling fluid escaped. Upon exploration, two diverticula found, one about length of little finger, extending backwards and downwards. Radical operation was not attempted. A catheter was sewed into the bladder with a puckered stitch; wound closed with drainage.

May 7. Copious leakage about tube and gauze wick; tube removed, and inlying catheter inserted. Patient sat up in bed; free drainage from the suprapubic wound and urethra. On the 10th moderate suppuration of prevesical space. Bladder irrigated with argyrol, 5%; urine much clearer. On the 21st, second operation by Dr. Mumford.

Operation. — Bladder opened suprapubically, and found almost as foul as at previous operation. Diverticula examined and found to be sacular, with a tight sphincter at the orifice. These sphincters were both widely dilated, and the diverticula packed with iodoform gauze. Rubber tube inserted through suprapubic wound and a No. 10 soft rubber catheter through urethra; prevesical space drained with gauze.

On June 8, wound fairly clean; temperature normal; some drainage through suprapubic sinus; urine much clearer. On the 19th, suprapubic wound leaked copiously; hardly any urine by urethra. On the 24th, patient etherized and pus pocket found on anterior wall of urethra; 32 sound passed, and good drainage established through a No. 11 English web catheter. On the 25th, the powerful action of the muscle drove out the catheter.

June 30. Operation by Dr. Jones. Posteriorly, urethra explored through the wound, and several pockets found. Index finger passed into the bladder, and a large rubber tube inserted and sutured in position.

July 3, patient has been draining well; little suprapubic leakage; urine less foul; no dependent drainage and frequent irrigation of bladder. On the 14th, catheter through urethra. On the 22d sleeping and eating better; urine clearer; draining well.

Aug. 2, patient discharged, but urine still foul; unless on constant drainage, some suprapubic leakage.

Re-entered hospital in my service, Sept. 20, 1907. Had been doing badly in the Out-Patient Department, and for the last five days pain in left renal region, and marked swelling of the left epididymis. Examination shows definite tenderness in the region of left kidney, with albumin and numerous casts in the urine, which is foul and full of pus. Patient had apparently developed a recent pyelitis as well as an epididymitis. Has lost weight and is utterly discouraged. On Sept. 8, I decided to make an attempt to remove the diverticula by Young's method.

Patient in Trendelenberg position; five-inch suprapubic incision to left of old scar. Everything was bound together by cicatricial tissue. Incision then made parallel to Poupart's ligament on the left, outward, for a distance of three inches. Dry gauze dissection backward and to the left, freeing the upper part of the bladder which had been distended with boric solution. The peritoneum was opened and through this the base of the bladder was examined. After carefully walling off with gauze, an elastic mass about the size of a banana, and three inches long could be made out extending backwards and to the left of base of bladder firmly adherent to rectum and surrounding structures. After freeing the bladder and diverticulum, it could be seen that the vas deferens ran obliquely inwards and backwards, anterior to the sac. An attempt was made along a line of cleavage to separate the rectum from the diverticulum, but this dissection was found to be too dangerous, so the bladder was opened suprapubically, and after much difficulty, the forefinger was hooked into the diverticulum and, the bladder with it, forcibly pulled forwards. After this maneuver with dry gauze, scissors and the finger nail, the rectum and surrounding tissues, after a half hour's dissection, were gradually separated from the wall of the sac. The diverticulum was then grasped with double hooks and firmly withdrawn, and cut off with scissors from the base of the bladder. The opening left was sutured with two layers of buried catgut stitches. The left urethra was not seen at any time, but the left seminal vesicle was exposed in the dissection. The peritoneum was closed. The bladder washed out carefully, and sutured in layers, about a suprapubic tube. The bed left, after the removal of the diverticulum, was packed with iodoform gauze, and a soft rubber tube and catheter was placed in the urethra. The operation I consider an extremely difficult one, requiring three hours of hard work. On the day following, however, the patient was in fair general condition.

Sept. 27. Bladder draining well, both above and below.

Sept. 29. On doing dressing this morning, part of peritoneum overlying upper part of wound was found to have protruded through the wound with a loop of intestine within it. There were no signs of strangulation, and the little perineal hernia with its contents was pushed backward and held in place with gauze without further trouble.

Oct. 3. Bed rest. Amount of drainage daily increases; patient very comfortable, with normal temperature; good drainage through urethral catheter; bladder washed out twice daily. No leakage through wound into dressing.

Oct. 4. This morning, the urethral tube was found to have drained hardly any, and the suprapubic dressing was soaked. The tip of urethral catheter protruded through suprapubic wound, which has opened, so that the suprapubic drainage tube was quite loose. The latter was therefore removed, and the catheter poked back into the bladder. Pelvic packing removed, and replaced by plain gauze, and upper angle of wound tightly restrapped with adhesive plaster.

Oct. 6. Wicks all removed and replaced with similar ones; two in number passing down between bladder and rectum. The upper angle of wound drawn together with adhesive plaster.

Oct. 7. Patient draining well this morning, with normal temperature, and little suprapubic leakage.

Oct. 8. Wound cleaning up well, and much less

painful; wicks between bladder and rectum removed and renewed.

Oct. 10. Catheter again protruded through suprapubic wound; replaced. Wicks removed and only one replaced.

Oct. 13. Catheter protruding and again replaced; wick renewed. There is some temperature and purulent discharge.

Oct. 15. Wick changed; there is still profuse purulent discharge through a deep sinus into the pelvis, behind the bladder; catheter draining well.

Oct. 16. Patient comfortable with normal temperature, and draining well.

Oct. 17. Sinus discharging freely; re-wicked.

Oct. 19. Redressed; not draining well; leaks through suprapubic wound.

Oct. 20. Drain of 36 oz.

Oct. 21. Catheter readjusted.

Oct. 22. Drain 67 oz.

Oct. 24. Drain 14 oz. Wound looks about the same.

Oct. 27. Drain 69 oz. On doing the dressing, the tip of the catheter was found protruding through the bladder sinus; pulled back. Has not leaked any; now there is a five-inch sinus going down into the pelvis, which is closing in and discharging less.

Present condition of patient: it has been most difficult to maintain urethral drainage, but when it is working well, there is little suprapubic leakage, but the eye of catheter is continually protruding in the suprapubic wound or becoming stopped up. At present, there is a small granulating sinus. The suprapubic opening in the bladder is apparently closed, but there is still some urinary leakage at the site of the suture. Over fifty ounces of fairly clean urine is discharged by the catheter every twenty-four hours.

The patient's general condition is much improved.

I. A CASE OF STOKES-ADAMS DISEASE WITH EXHIBITION OF THE PATIENT.

BY H. F. VICKERY, M.D.

A. G., a male cook, sixty-eight years old, entered my wards at the Massachusetts General Hospital, Sept. 9, 1907. His family history was good, except that his mother had died of heart disease at the age of seventy-one. His habits were temperate. Venereal disease was denied, but exposure confessed. For eighteen years he had been subject to convulsive seizures, occurring usually without warning, and sometimes as often as two or three times in a month or again once in two or three months. Occasionally he bites his tongue in them. Eight weeks before entrance he noticed swelling of the abdomen, but he has had no dyspnea nor cardiac pain, and he has been doing light work.

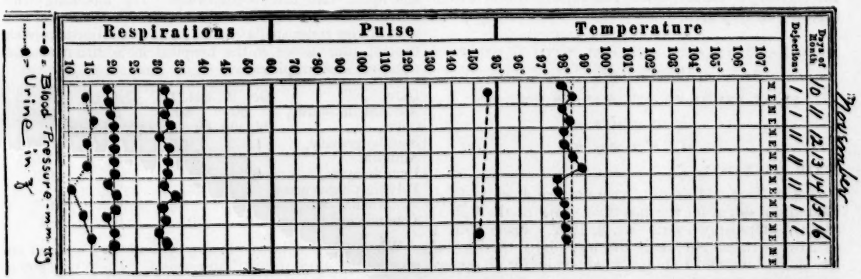
Physical examination showed a pale, well developed, poorly nourished man with a pulse and apex beat of 30 to 35 per minute. (See sample of chart.) The radial arteries were tortuous and hard, with irregular platelets of calcification. The posterior peroneal arteries could not be felt to pulsate. The systolic blood pressure was 150 to 160 mm. of mercury. The heart's apex was three quarters of an inch outside the left nipple, in the fifth space. The heart sounds were regular, slow and forcible. There was a systolic murmur at the apex, transmitted a short distance to the left. The pulmonic second sound was slightly accentuated.

A jugular pulse was seen, not easily counted, but apparently two or three times as frequent as the apex beat. It was not possible to detect by auscultation any sounds suggestive of more frequent contractions of the auricles or of the right ventricle, as distinguished from the systole of the left ventricle. Dr. F. W. Palfrey has made simultaneous tracings of the pulsations of the right jugular vein and right subclavian artery. (See cut.) Fluoroscopic examination had an indecisive result; of six equally competent observers, three thought they could see pulsations of the auricles more frequent than of the ventricles in the ratio of about 65 to 25; the other three observers could not verify this. As the examination fatigued the patient, it did not seem justifiable to prolong or repeat it.

The abdomen was twice tapped:

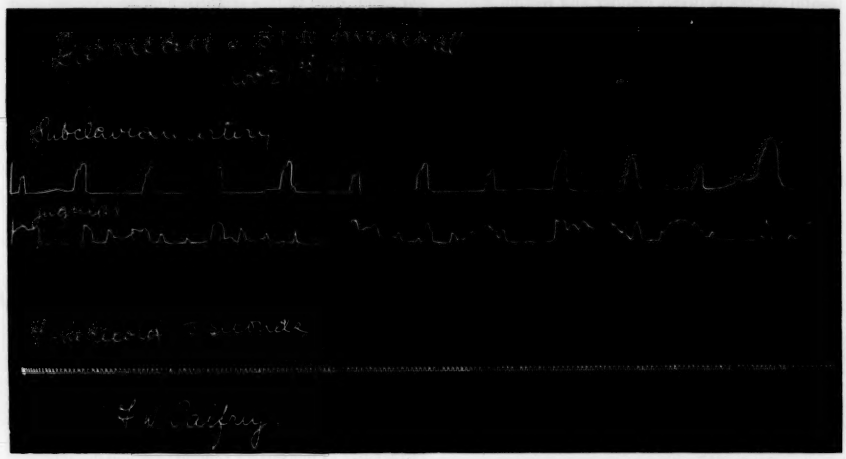
Amount, culture.	Eight pints, sterile.	Three pints, sterile.
Specific gravity,	1,009	1,011
Albumin,	¾%	1¼%
Tubercle bacilli,	0	0
Lymphocytes,	82%	86%
Endothelial cells,	17%	13%
Polymorphonuclears,	1%	1%

The fluid was regarded as a non-inflammatory transudation. At the present time, the patient having been confined in bed for ten weeks, there is scarcely any liquid in the peritoneal cavity. At the time of entrance, the eyelids and the lower extremities were slightly edematous; but this swelling has been absorbed.



The urine has a slight trace of albumin with a few hyaline casts.

The liver is slightly enlarged. No change in the spleen can be detected. There is no striking change in the veins connected with the portal circulation.



CASE IV.

The patient, although never intoxicated, has drunk more or less alcohol for forty-five years, and it does not seem possible to exclude absolutely the existence of a limited degree of hepatic cirrhosis.

About a month after entrance several convulsions occurred in the course of a few days. One of these was watched by my house-officer, Dr. L. H. Burlingham. He states that both heart and respiration ceased. Apnea lasted two minutes and the heart began to beat before the resumption of respiration. In some of the attacks there was an escape of urine and feces.

It is to be remarked that these convulsions first began when the patient was about fifty years old, late in life for true epilepsy, and that the length of time since they appeared, together with the physical examination of the patient, justify us in ruling out almost all other causes except the Stokes-Adams disease; so that it seems probable that this latter condition has existed for eighteen years. Osler has reported one which lasted thirty years.

MALIGNANT DISEASE OF PLEURA, WITH EXHIBITION OF SPECIMEN.

BY H. F. VICKERY, M.D., AND OSCAR RICHARDSON, M.D.,

WITH REMARKS

BY J. H. WRIGHT, M.D.

DR. VICKERY:

Mrs. J. T., a widow sixty years of age, born in England and resident for the last two years in the United States, entered my wards Oct. 9, 1907. From Nov. 1 to Nov. 9 (when she died) she was under the care of Dr. R. H. Fitz, and I am indebted to him for an opportunity to report the case.

There was no family history of tuberculosis or cancer. There was no evidence of syphilis. The menopause occurred at fifty-three, without symptoms. The habits and previous health had been good. A year ago she was ill in a hospital for one week with diarrhea and vomiting, and she has been "run down" ever since. About eight months ago, she fell into a hole in a floor, and hurt her foot and right side; since then she has had occasional pain (sometimes severe) in that side. For seven weeks the pain has been much worse and almost constant, and her general health has suffered. She has had slight dry cough, dyspnea, fever at night, gastric distress and nausea without vomiting. In bed for almost five weeks. Four weeks ago, five pints of bloody fluid were withdrawn from her right chest, and an equal amount six days later. Expectoration is very scanty — a little clear mucus.

The patient was well developed and well nourished, somewhat cyanotic, never cachectic. The heart's apex was in the eighth interspace, 6¼ inches to the left of the mid-sternum beyond the anterior axillary line. The sounds were of good quality without murmurs. The pulmonic second sound was slightly accentuated. The radial pulses were synchronous, equal, regular and of good volume and tension. The right chest was very dull where it was not flat, with respiration, vocal resonance and vocal fremitus almost absent, except at the apex. No râles were heard. The left lung was normal (except for Grocco's sign). Pressure on the ribs in the right axilla causes pain. The patient was tapped four times in the hospital in addition to the two previous tappings:

Date,	Oct. 9	Oct. 14	Oct. 17	Nov. 3
Amount in ounces,	90	80	25	19
Color,	bloody	bloody	very bloody	
Specific gravity,	1,019	1,016	1,014	1,015
Albumin,	3%	3.5%	3%	1.6%
Lymphocytes,	97%	97%	94%	90%
Polymorphonuclears,	3%	3%	2%	....
Endothelial cells,	....	....	4%	10%
Tubercle bacilli,	0	0	0	0

When the needle was inserted, it always seemed to go through more tissue than normal. There was some relief afforded by tapping but not much improvement in the physical signs nor in the position of the heart.

The x-ray showed a diffuse shadow over the whole right side not changing with change in the position of the patient, also a mass near the hilum of the left lung.

The pain required increasing doses of morphine,

up to ¾ gr. during the night. Dyspnea increased more rapidly than the heart failed. The pulse remained good till the last half hour. The temperature ranged between 98° and 101°, the pulse between 80 and 110; the respirations were usually 28, before the end rising, however, to 45. The urine was negative. The per cent of hemoglobin was 85, the white count, 4,800. there was never such a temperature as to permit a tuberculin test.

Malignant disease was thought of from the first, but tubercular disease perhaps involving mediastinal glands was not considered impossible.

I. DERMATITIS HERPETIFORMIS (HERPES GESTATIONES). II. RAYNAUD'S DISEASE.

BY H. P. TOWLE, M.D.

I. This woman who is now in the fifth month of her fifth pregnancy states that at about the third or fourth month of each of the four preceding pregnancies an eruption similar to that now present has appeared which persisted until after delivery. With the termination of pregnancy the eruptions cleared up gradually and the patient remained free until the next pregnancy. The attacks have increased in severity with each outbreak, the present being the most severe of all. The eruption itself is also of interest as it shows to an unusual degree the multiplicity of lesions characteristic of the disease. Upon the front and back of the trunk are large erythematous plaques of irregular wavy outline together with scattered small circinate lesions. Upon the lower arms especially, the lesions are very suggestive of erythema multiforma with their prominent peripheries, clearer centers and central dark spots. Upon the inner surfaces of the thighs and in the groins are the characteristic almost purple areas left by preceding lesions from which spring vesicles and bullæ of varying sizes and varying outlines, everywhere arranged in groups. Upon the lower legs and to a less degree upon the thighs are pustular lesions in addition to vesicles and bullæ. Vesicles and bullæ are also to be seen in groups upon other parts of the body. Pruritus is a marked feature of the case and is so severe as to prevent sleep.

II. Signs of a disturbance of the circulation are to be seen in all the fingers of this woman to a marked degree and to a lesser extent in the ears. Variations in color from dead white to a static blue are constant and often rapid. Upon entrance the anemic condition seemed to predominate, but recently the congestive has been the more frequent state. This is particularly true of the terminal phalanx of the middle finger of the left hand over which the bluish color is appearing more and more frequently for gradually lengthening periods. Subjectively, the patient complains of coldness and pain in the hands and arms almost continuously.

I. SUPRAPUBIC PROSTATECTOMY AND STONE IN BLADDER.
II. RUPTURE OF THE INTESTINE.
III. ECHINOCOCCUS CYST OF LIVER.

BY F. G. BALCH, M.D.

I. W. B., seventy-eight years old, entered my service at the Massachusetts General Hospital, July 8, 1907.

His family history is interesting in that his father was over seventy years of age when he died and his grandfather lived to be one hundred and twenty years old.

Six years before entrance he had an attack of bloody urine. Before that time he had had no pain, but after that the pain was severe and was referred to the end of the penis on micturition. He had seen blood six or seven times following exercise. He was having some difficulty in micturition and the frequency was especially distressing, often forcing him to get up six or seven times at night. There was no dribbling. More recently he had had less pain in the penis, but more in the rectum, especially on walking. The urine was foul and thick. There was a small hydrocele on the left. He thought he had lost 25 lb. in the last three years. Appetite was good. There was very slight sclerosis of the arteries. Tongue very dry and cracked. Heart and lungs were not remarkable.

Rectal examination showed the prostate much enlarged, especially on the right. It was not tender nor nodular. An attempt at cystoscopy was not satisfactory. The instrument went in with difficulty and caused much hemorrhage. A suprapubic cystotomy was done. Two stones lay in the bottom of the bladder, one a small round one about the size of a small cherry and the other irregularly shaped, being an almost exact representation of the small iron jackstones which children play with. The prostate was of large size, but shelled out very easily. The wound was partially closed and two drainage tubes put into the bladder. For the next forty-eight hours constant irrigation with salt solution was continued. In three days both tubes were removed and the next day he passed some water by urethra. On the eighteenth day the leakage had ceased and he was discharged on the twentieth.

Pathological examination of the prostate made by Dr. Kidner showed cystic hypertrophy of the prostate. There was no evidence of malignancy.

I am indebted to Dr. Edmund D. Chesebro, of Providence, for some further notes on this case.

He wrote me Nov. 11, saying the patient had been to see him three times. On Aug. 9, he had a small sinus which had closed up on the 27th. He was having a good deal of trouble with flatulency and constipation and various aches and pains in all parts of his body. There was some irritation of the bladder and mucus in the urine.

A letter written Nov. 8, by the patient, says he still has a great deal of pain like rheumatism, especially in his back and legs. He has a great deal of eczema about the anus and it extends out on to his legs and forward on to the scrotum. This was there before operation. He has various stinging sensations about the wound, and the urine is at times ammoniacal and still has a large amount of mucus in it. He passes a good stream but has to get up three or four times at night and passes water quite often during the day. If he tries to hold it long, he has some pain.

I wrote him advising him to take urotropin for his cystitis and since then have not heard from him.

II. L. F. W., twenty-three years old, was sent to the Massachusetts General Hospital by Dr. Robert T. Porter, of North Easton.

The family history and past history were unimportant.

The history as given at the hospital was that the night before entrance, the man was riding a bicycle at about 8.30, and while going down hill fast, he struck a stone; this threw him violently against the handle bars and over on the ground. He got up and went home. Severe pain began at once in the abdomen and was persistent. There was considerable nausea but no vomiting. Bowels had not moved since the accident. The urine was clear.

On the day of the accident he had ridden to Taunton, starting about 9 A.M., and presumably after having had some breakfast. He drank more or less all day, beer, ale and whiskey. He ate one or more ham sandwiches,

but nothing else. I have been unable to find out just what time he had these sandwiches, but probably somewhere about noon. He is a chronic alcoholic.

Dr. Porter saw him about 5.30 in the morning and brought him to the Massachusetts General Hospital.

Examination in the Accident Room showed nothing abnormal in the chest. The abdomen was very rigid over the entire left side and over the lower half on both sides. The right upper quadrant was slightly less resistant. There was marked tenderness on the left side over the region of the bladder. The lower half of the abdomen was dull but there was no shifting dullness and no masses to be felt. Temperature 101°, white count 12,000.

The abdomen was opened by a 4-inch incision in the median line. A moderate amount of blood-stained fluid escaped. Examination of the intestines in the lower abdomen showed nothing to account for his condition. In the left upper quadrant a mass of slightly matted intestines was felt and on withdrawing the hand a moderate amount of intestinal contents followed. The incision was enlarged upwards and the intestines systematically searched, from the cecum up, for a rupture. A large hole was found high up in the jejunum. This was closed with a continuous suture of chromic catgut. A second continuous Lembert suture of Pagenstecher was placed. The peritoneal cavity was thoroughly flushed out with salt solution. A cigarette wick was placed in the pelvis and another in the region of the tear in the intestine.

The patient made an uninterrupted recovery. The cigarette wicks were replaced in four days with small wicks of rubber tissue. He was discharged to the Out-Patient Department in twenty-six days. His temperature was at no time over 100° and the pulse, which was at the time of the operation 130, fell to 60 on the fifth day.

The fact that the patient had eaten but little on the day of the accident, and that was early in the day, that it had gotten below the uppermost portion of the small intestine, probably had much to do with his recovery.

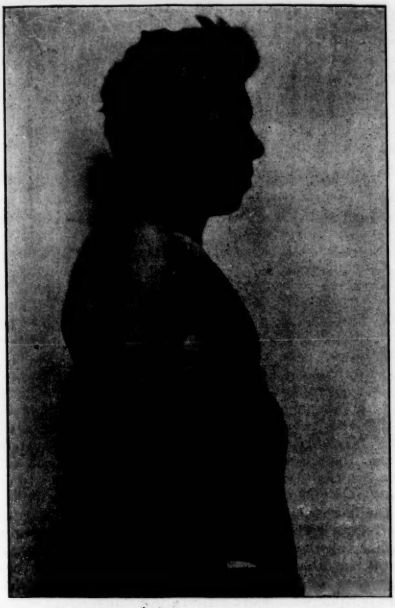
III. A. G., twenty years old, entered the hospital from the Out-Patient Department on July 5, 1907.

He had never been sick before. One month before entrance he noticed a swelling at the right costal border. This was painful and prevented him from working. It appeared suddenly but had not increased in size. He had never been jaundiced.

Examination showed a healthy young man in other respects. There was a smooth, rounded swelling in the upper right quadrant of the abdomen which bulged the lower ribs forward. It was the size of a large orange, tense but not tender. It descended with respiration. The liver dullness extended to within one inch of the umbilicus. The sharp edge of the liver was easily felt. Its surface was smooth, otherwise the abdomen was negative.

I operated on July 8, 1907.

On opening the abdomen a mass the size of a grape fruit was disclosed coming out of the center of the liver well up above the lower margin. It was tapped and several ounces of clear watery fluid were withdrawn. After drawing off a large amount the tumor collapsed and the fluid became bile stained. The opening was then enlarged showing the collapsed wall of a single large echinococcus cyst. This was removed and the cavity packed with gauze. During convalescence large amounts of bile came from the wound. After the gauze was removed it was replaced by a drainage tube. An attempt was made to leave this tube out on the 22d, but the patient had a chill and it had to be replaced. This occurred on two later occasions when attempts were made to leave the tube out.



CASE 3.

Finally, on the 21st of August, he was discharged to Waverley. At that time the wound was still discharging slightly.

ECHINOCOCCUS CYST OF THE LIVER AND OF THE GALL BLADDER.

BY D. F. JONES, M.D.

THE following case was operated upon in Dr. C. A. Porter's service, and I am indebted to him for permission to report it.

A. P. J., aged forty-nine, a Swede, machinist by trade, entered the Massachusetts General Hospital Aug. 24, 1906.

In February, 1906, he was jaundiced for three weeks. After the jaundice, a small, hard, painless lump was noticed in the epigastric region. This grew gradually larger, but was never painful. He came to the hospital only because of shortness of breath.

He was born in Sweden, and came to America twenty-four years ago. He went home on a visit, and came back here sixteen years ago, and has lived ever since in Cambridgeport. He has had nothing to do with animals.

Physical examination showed a large, median, epigastric tumor, extending from below the umbilicus upward to the costal border, somewhat tender on pressure.

He was operated on, Aug. 25, 1906. A median incision was made. A large, thick-walled cyst was found on the under surface of the liver. The wall appeared to be made up of liver substance. The omen-

tum, stomach and transverse colon were adherent to the surface.

After walling off thoroughly with gauze, the cyst was incised. Immediately a cloudy fluid, filled with grape-like bodies varying in size from a pea to an egg, escaped. The cyst must have contained two quarts in all. The inside of the cyst was curretted with the fingers and with pads of gauze, and finally packed with two handkerchief gauzes. The wound was closed, except for the drainage wound.

His recovery from the operation was uneventful. The daughter cysts and the cyst-wall continued to be discharged with each dressing. On Sept. 21, the cyst wall was curetted with a sharp curette, and on Oct. 8, the patient was discharged in good condition, with a small rubber tube in the sinus. This sinus had closed entirely one month later.

Dr. Simmons reported an echinococcus cyst. The culture taken at the time of operating showed various cocci, mostly streptococci.

After being discharged, the patient was well until June, 1907. He then had a sharp pain in the right side, which on breathing went into the right shoulder. Two days later, he was jaundiced. He gave up work on account of generally poor condition. On June 22, he suddenly felt lame in his back. He became yellow, and had an aching pain in the upper abdomen, which persisted until he entered the hospital. The pain was especially bad between the shoulders and in the right hypochondrium. He entered the hospital on June 27, and had two severe attacks of pain in the right hypochondrium and between the shoulders, similar in all respects to an attack of gallstone colic. With the pain there was an increase in tenderness and rigidity, and his temperature rose to 103°.

Physical examination showed him to be markedly jaundiced. The abdomen was rigid, but not distended. There was a definite tumor on the right, descending to three inches below the costal border. It was very tender, and moved with respiration. On admission, his temperature was 101°, and ranged between this and 103.5°. On July 4, the jaundice was much lighter, his temperature was normal, and the tenderness was less.

The second operation took place July 5, 1907. The old cicatrix was excised. The site of the former cyst was perfectly smooth, and normal appearing, except for the adhesions. In the right hypochondrium, filling the whole flank, was an irregular mass, surrounded by adhesions. This was walled off and the mass broken into. It was found to contain bile-stained, cloudy fluid, and was filled with daughter cysts. The walls of this cavity were irregular, and seemed to be made up of adherent intestines and omentum. The gall bladder was much thickened, and the whole of the left side had disappeared. This also contained daughter cysts and cloudy fluids.

The whole cavity was curetted with the fingers, and packed with gauze. There was considerable shock and inflammatory reaction for a few days, but the patient soon recovered, and left the hospital on July 29, with a small sinus.

Whether this cyst took its origin from the old cyst outside the gall bladder and made its way into it, or originated in the gall bladder and made its way outward, is impossible to say; but judging from the character of the cyst-wall, and the ease with which it was broken into, one would think that the cyst originated in the gall bladder and ruptured into the abdominal cavity.

The patient to-day is in excellent condition, has had no pain since leaving the hospital and there is no evidence of further growth.

There are two points to which I should like to call attention. First, that the patient has not been out of Cambridgeport for sixteen years. This fact, with the marked increase in the number of cases of echinococcus cyst which have entered the hospital in the last two years, and the increase noted in animals by the government officials, would lead one to inquire if echinococcus cysts are not increasing in the United States. I hope to be able to throw some light on this question in a later paper.

Secondly, it will be noted that the culture taken from the cyst at the time of the first operation showed many cocci, and particularly streptococci, to be present. In connection with this, another case which I operated upon this summer is of interest.

The patient was a Greek, who entered the hospital with acute abdominal symptoms, and a mass in the epigastrium connected with the liver. It proved to be an echinococcus cyst, and in spite of the most careful walling off before opening the cyst, and drainage of it with gauze, the patient died of a general peritonitis due to a pure culture of colon bacilli.

One should, therefore, use the greatest care when operating upon these cases, not to soil the peritoneum.

Reports of Societies.

INTERNATIONAL DERMATOLOGICAL CONGRESS.

Sixth International Dermatological Congress, Held at the Academy of Medicine, New York, Sept. 9 to 14, 1907.

(Continued from No. 24, p. 797.)

Second Day, Tuesday, Sept. 10. Morning Session.

The first two hours of the session were devoted to the exhibition of patients and a formal discussion on the same.

Dr. H. Radcliffe-Crocker, of London, Vice-President, in the chair.

THE PATHOLOGY OF THE BROWN-TAIL MOTH DERMATITIS.

Dr. E. E. Tyzzer, of Boston, Mass., in this paper, said the exact date of the introduction of the brown-tail moth into this country was unknown, but it was first noted in large numbers in 1897, in one of the suburbs of Boston. This species had since spread throughout the greater part of New England and had also penetrated adjacent territory. It had been shown that the dermatitis which was produced by these insects was due to very minute, sharp-pointed, barbed hairs, the "nettling hairs" which developed on the caterpillar. The other hairs were harmless. On experimentation with the nettling hairs, it was found that when they were mingled with a drop of blood, a peculiar reaction took place which served as an index to their toxicity. The toxic principle was removed from the hairs by dilute alkalis and by water heated to 60° C., but it was insoluble in other common reagents. It was quite resistant to heat and withstood baking for one hour at 110° C., but was destroyed by baking at 115° C. The nettling hairs after such treatment

no longer gave any reaction when mingled with blood, and produced no irritation when inoculated upon the skin.

TRAUMA AS AN ETIOLOGICAL FACTOR IN SKIN DISEASES.

DR. NEUBERGER, of Nuremberg, Germany, read a paper with this title, in which he emphasized the importance of trauma as an etiological factor in the production of certain skin diseases.

DR. JOSEPH ZEISLER, of Chicago, said that thirty years ago, Kaposi and his school insisted that trauma might act as the focus in the production of various diseases of the skin, and this fact had been pointed out in connection with lichen planus, eczema and psoriasis, and even in syphilis.

DR. A. RAVOGLI, of Cincinnati, said there were a number of diseases of the skin which were apparently the result of trauma, as, for instance, the erythema due to irritation of the skin.

IDIOPATHIC MULTIPLE HEMORRHAGIC SARCOMA (KAPOSI).

DR. M. B. HARTZELL, of Philadelphia, said that in 1872, Kaposi first called attention to an unusual and remarkable affection of the skin characterized by the occurrence of deeply pigmented infiltrated patches and small tumors, situated almost invariably on the extremities, followed after several years by visceral metastases and death, for which he proposed the name idiopathic multiple pigmented sarcoma, a name which he, twenty years later, changed to idiopathic multiple hemorrhagic sarcoma, as being more accurately descriptive of the disease. He regarded the malady as a typical, although special and peculiar, form of round-celled sarcoma, with the occasional occurrence of characteristic spindle cells. Soon after the appearance of Kaposi's paper, other observers began to report similar cases, and the list had steadily, though slowly, grown until the number of recorded cases was now something over one hundred. While the affection seemed to be peculiar to no country nor race, the great majority of cases on record had been reported by European observers, and fully one half of these were from the northern provinces of Italy. The number of cases reported in America was extremely small, and some of these occurred in foreign born. Dr. Hartzell then reported in detail a case of this affection which recently came under his observation.

DR. H. RADCLIFFE-CROCKER, of London, said this disease was rarely met with in England. It was most commonly observed there among the Poles and Galicians.

DR. EDWARD H. SHIELDS, of Cincinnati, referred to a case of this character that he had observed in Kaposi's clinic.

DR. ROLLIN H. STEVENS, of Detroit, mentioned a case very similar to the one reported by Dr. Hartzell, which he had observed in a man, seventy-two years old, a native of Michigan, in whom the disease had developed five years before, after a visit to Denver.

DR. SAMUEL SHERWELL, of Brooklyn, N. Y., said that about 1892 he wrote an article on this subject in which he claimed good results for the use of arsenic in large doses.

MULTIPLE BENIGN CYSTIC EPITHELIOMA. (DEMONSTRATED FROM LANTERN SLIDES.)

DR. M. L. HEIDINGSFELD, of Cincinnati, presented this paper, in which he offered the following conclusions: 1. Multiple benign cystic epithelioma, lymphangioma tuberosum multiplex and adenoma sebaceum were affections which possessed sufficient clinical and pathological variations to render many of the cases of doubtful recognition and classification. 2. These three affections were doubtless of embryonic misplaced tissue origin, and the clinical and pathological variations which were noted in each were sufficiently common to all to give them a common classification, and thereby prevent a somewhat arbitrary, confusing and redundant nomenclature. 3. Some of the clinical and many of the pathological changes had a striking resemblance to those manifested in early malignancy of the skin. 4. It was highly probable that malignancy of the skin, aside from other causal influences, also owed its direct origin to misplaced embryonic tissue.

Dr. Heidingsfeld's paper was discussed by DR. M. B. HARTZELL, of Philadelphia, and DR. JOSEPH GRINDON, of St. Louis.

OBSERVATIONS ON SKIN DISEASES IN THE NEGRO.

DR. HOWARD FOX, of New York, read a paper on this subject in which he gave the following conclusions: 1. In spite of the fact that the negro was more susceptible to disease in general than the white man, and that his mortality was twice as great, he suffered less frequently and less severely from diseases of the skin. 2. The negro skin was decidedly less susceptible to external irritants. 3. The full-blooded negro was almost immune to ivy poisoning. 4. Acne was less common and much less severe in the negro. Rosacea was a rare and very mild affection. Eczema was perhaps not less frequent, though certainly less severe. Psoriasis in the full-blooded negro was very uncommon. 5. Tuberculosis of the skin was not more common in the negro, in spite of the great prevalence in this race of pulmonary and other forms of tuberculosis. 6. Syphilis was certainly more common in the negro than in the white. The acquired form was probably not more virulent, and tertiary forms were not more common. A tendency to the annular syphilide, as well as to keloid, elephantiasis and fibroma deserved to be classed as a racial peculiarity of the negro. 7. The negro was more subject to new growths of connective tissue origin, and less so to those originating in epithelial structures. Cutaneous epithelioma was very rare in the full-blooded negro. 8. The mucous membranes, as well as the skin, were less susceptible to disease. Leucoplakia was seen in the negro with extreme rarity. 9. Many of the rarer forms of skin disease were observed in the negro as well as in the white race. 10. Mulattoes were more susceptible to skin diseases than negroes, being especially prone to chloasma.

DR. ISADORE DYER, of New Orleans, said that in the South, the negro, as a rule, did not apply for treatment for a skin condition, unless it was disfiguring or caused him suffering. The annular syphilide, as seen in the negro, was frequently partly vesicular; there was an arc of the circle which was quite markedly vesicular in type. The observation had been made in New Orleans, that perhaps the only malignant type of syphilis seen there occurred in the negro; only exceptionally in the white.

DR. JOSEPH GRINDON, of St. Louis, said the first question to be answered in regard to the relative frequency of certain skin diseases in the negro was, Who is a negro? To get the facts strictly correct, the investigation should be limited to the pure negroes, on one side, and the pure whites on the other. This, however, would be impracticable, as there was more or less white blood in so many members of the black race.

GANGRENA CUTIS HYSTERICA.

DR. H. P. TOWLE, of Boston, in this paper, limited himself to those cases of gangrene of the skin which were either of artificial or of so-called spontaneous origin. It did not consider the cases of gangrene which occurred in childhood, or which were due to such causes

as bacteria, organic diseases of the nervous system, or to obliterative diseases of the vessels. The paper gave the clinical histories of four cases of multiple gangrene of the skin, three in women and one in a man. While the cases varied somewhat from each other in minor details, they were alike in their essential features. They occurred in patients who were more or less markedly hysterical. Each case had suffered some sort of trauma before the appearance of the first gangrenous lesion. The first manifestation was in the immediate neighborhood of the preceding injury. After varying intervals of freedom, new lesions appeared farther and farther away from the starting-point, as time went on. The affection had existed for months, and in one case for years. The changes in the skin from the time of the first appearance of the lesions until they became gangrenous were very rapid, while on the other hand, healing was very slow. Recurrences never occurred when the patient was under control, and the affection never involved the parts which were not readily accessible. The physical examination showed nothing which would account for the changes in the skin. It was believed the eruptions were all feigned, but the evidence remained purely circumstantial, as none of the patients would confess, and nothing was ever discovered with which the lesions could have been produced.

Dr. H. Radcliffe-Crocker, of London, said that while he fully believed that all of these cases were self-inflicted, very able men who had had such cases under observation for long periods of time had expressed the belief that the lesions were not self-produced, although they were perfectly aware of such a possibility and even probability.

Prof. E. Gaucher, of Paris, France, said the gangrene was a secondary phenomena, caused by infection of a slight abrasion of the cuticle, but hysteria prepared the ground on which the gangrene developed.

Afternoon Session.

Dr. F. J. Shepherd, of Montreal, Vice-President, in the chair.

Theme I. The Etiological Relationship of Organisms Found in the Skin in Exanthemata. Smallpox.

Prof. W. T. Councilman, of Boston, in discussing this subject, said the cause of smallpox was believed to be a parasitic organism having its habitat in the epithelial cells of the specific lesions of the skin. It was first recognized by Guanieri, and named by him cytorrhyctes variolæ. It was described in more detail by Councilman and his co-workers in 1904, and a probable life cycle was established by Calkins. The organism underwent a definite development within the skin, certain forms corresponding with the period of eruption. The same organism up to a certain period of development was found in vaccinia. Certain stages of development were peculiar to smallpox and only found in the lesions of that disease. It was believed that there were probably two cycles of development: (1) an imperfect cycle, probably analogous to the asexual cycle of the coccidia, which was common to both vaccinia and smallpox; (2) a complete cycle, representing a further development of the vaccine cycle, which was only found in smallpox. The virus of smallpox differed from that of vaccinia in its capacity of transmission without contact. The monkey was susceptible to the smallpox virus, and inoculation with smallpox material (contents of pustules) produced a disease with the specific lesions of smallpox and with a complete cycle of the parasite. Inoculation of the rabbit or calf with smallpox material produced a disease comparable to vaccinia, and with the incomplete or vaccine cycle of the organism. The inoculation smallpox of the monkey could be transmitted from animal to animal. The vaccinia produced in the calf or the rabbit, by inoculation of smallpox material was transmitted as vaccinia from animal to animal. Monkeys had been shown to be susceptible to smallpox only by artificial inoculation: it was not possible to infect them by means of exposure. The inoculated disease produced in monkeys had the same period of incubation as variola inoculata in man. In addition to the skin lesions, lesions specific to the disease were also found in the bone marrow and in the testicle. All other lesions of the disease were not specific, and were to be attributed either to the action of toxins or to the action of infectious bacteria, chiefly streptococci. Both vaccinia and smallpox led to active hyperplasia of the lymphoid tissues, with the production of large mononuclear lymphoid cells which passed from the lymph nodes into the blood.

Cytorrhyctes Variolæ: The Organism of Smallpox.

Prof. Gary N. Calkins, of New York, said he would interpret the organism of smallpox as a rhizopod, of which only one phase of the life history was known, namely, the asexual or vegetative phase. This was characterized by development of the chromidium and formation of small reproductive spores (" gemmules ") which repeated the cytoplasmic cycle. The intranuclear forms possibly belonged to the sexual cycle, and it was not improbable that, as Councilman had early suggested, the intranuclear forms might be a different cycle of the organism occurring in variola and not in vaccinia. He would interpret the vesicular forms as either poorly fixed organisms, or as degenerative forms of the organism, the degeneration being produced by the accumulation of toxins found in the breaking-down vesicle. In any event, the intranuclear forms of the organism presented a different history from that of the cytoplasmic forms, and this history remained for some one to work out on well-fixed tissue, or, better still, on the living organism.

The papers of Drs. Councilman and Calkins were discussed by Drs. Walter R. Brinckerhoff, of Honolulu, and Thomas C. Gilchrist, of Baltimore.

The Opsonic Method in Skin Diseases.

Dr. Arthur Whitfield, of London, England, said the term " opsonin " was applied to designate a hypothetical body present in the blood serum. It had not been isolated, but its action had been detected and estimated by Wright and Douglas. The method of opsonic determination consisted of mixing definite volumes of blood serum, bacillary emulsion and living leucocytes under suitable conditions, and afterwards making stained preparations from the mixture to demonstrate the numbers of ingested bacilli. A comparison of various sera by this method gave varying results which might be used for the estimation of the individual resistance to the organism in question. The method had been proved to be accurate within the limits of a 5% to 10% error, which was admitted. The opsonic method might be used for diagnosis, or, in conjunction with the inoculation of bacterial vaccines, for treatment. The diseases of the skin in which the method found a place, were the primary and secondary staphylococcic infections and tuberculosis. The opsonic method in boils was always successful, and was the only form of treatment for general furunculosis that was in the slightest degree reliable. In sycosis the method was a valuable one, but must be continued for long periods in proportion to the duration of the disease, and was best combined with x-ray epilation. In acne, the treatment was uncertain, some results being astonishingly brilliant; others entirely nega-

tive. In septic dermatitis and ulcers, the treatment was of distinct value as an auxiliary. In Bazin's disease the treatment was somewhat uncertain, but it was often of help. In tubercular ulceration it was of great value. In lupus vulgaris, the treatment alone was too slow and uncertain to be recommended. According to Bulloch it was a valuable auxiliary in those patients who relapsed after Finsen's treatment, and the speaker said he had found it of value combined with x-rays.

BACTERIAL INOCULATION IN THE TREATMENT OF SUPPURATIVE AND TUBERCULOUS DISEASES OF THE SKIN AFTER THE METHOD OF WRIGHT.

DR. E. M. VON EBERTS, of Montreal, Canada, after a brief review of the technic of opsonic determinations, gave his results with this method of treatment in acne indurata, sycosis, furunculosis and lupus vulgaris. He stated that in the treatment of tuberculous infections of the skin, the question of autogenous vaccines was at present impracticable, but very encouraging results might be obtained with Koch's new tuberculin (T. R.). Increasing experience showed that the doses originally employed in staphylococcic infections were too large, so that at the present time, instead of 500 millions or more being injected at the initial dose, it had been found advisable to start with 100 or 200 millions, or in a tubercular case, with 1-2,000 to 1-1,800 mgm. of T.R., deciding as to the effect and subsequent dosage by the immunity reaction induced in the individual, as interpreted by the opsonic findings. If the negative phase following inoculation was severe or prolonged, the dose should be diminished. Where, on the other hand, the immunizing response was inadequate, *i.e.*, where the negative phase was suppressed and the positive phase but slight, the dosage should be increased. The objective and subjective symptoms following inoculation were, to a trained observer, almost as valuable guides as the opsonic findings. Experience taught one that exacerbations in the local symptoms were the harbinger or accompaniment of a depressed immunity (negative phase). On the other hand, comparative anemia accompanied the positive phase. This latter phenomenon, no doubt, accounted for the decrease in the subjective symptom of pain, which was invariably admitted in severe furuncular infections. In old lupus cases, the bleaching of the scar was a very striking feature. Constitutional symptoms were rarely met with and should never develop if the dosage is properly adjusted.

BACTERIAL INJECTIONS IN THE TREATMENT OF DISEASES OF THE SKIN.

By DRS. JAY FRANK SCHAMBERG, NATHANIEL GILDERSLEEVE and HARLAN SHOEMAKER, of Philadelphia. In this paper, the authors reported 21 cases treated by bacterial injections. This number included 9 cases of sycosis vulgaris, 3 of furunculosis, 4 of acne, 2 of acne with sebaceous abscesses, 1 of eczema, 1 of psoriasis and 1 of lupus erythematosus. Some of these patients had been under treatment only a short time, and were continuing to make progressive improvement. Of the cases of sycosis vulgaris, 1 was entirely cured; 3 were almost well; 1 was greatly improved; 2 were slightly improved and 2 had not improved. Of the 3 cases of furunculosis one was cured, one was almost cured, and one was improved. Of the four cases of acne two were cured, one was not improved and in 1 the flushing had been relieved. The 2 cases of acne with sebaceous abscesses were decidedly improved. In 1 case of eczema with pyogenic lesions, the latter were cured and the eczema rendered amenable to treatment. The case of psoriasis was temporarily improved. The result in the case of lupus erythematosus was still uncertain. Considering the fact that the majority of these cases were rebellious and of long standing, and that they had resisted approved treatments of all kinds, the results must certainly be regadred as encouraging.

DR. A. RAVOGLI, of Cincinnati, said he could confirm what had been claimed for the opsonic method of treatment in sycosis, and his personal experience with it had been very encouraging.

DR. E. R. LARNED, of Detroit, said that if we could control the size and frequency of the dose by the clinical results, then the opsonic method of treatment would come within the reach of many general practitioners, but if it was necessary in each case to compute the opsonic index, in order to regulate the size of the dosage, and to use autogenic vaccines instead of stock vaccines, then it would be a long time before the problem would be solved.

DR. STAFFORD TAYLOR, of Liverpool, England, said that in some of his cases of sycosis he had derived much benefit from vaccines prepared according to Wright, but the majority required x-ray treatment before a cure resulted.

ERYTHEMA CIRCINATUM BULLOSUM ET HEMORRHAGICUM. AN ERYTHEMATOUS ERUPTION FOLLOWED BY THE FORMATION OF BULLÆ, PETECHIÆ AND DEATH.

DR. WILLIAM T. CORLETT, of Cleveland, Ohio, reported a case of this character. The patient was a boy of twelve, who received a scalp wound from the ball of a Flobert rifle. No serious manifestations followed, and the wound healed in less than a fortnight. At this time, however, the patient complained of acute pains in the joints, notably in the ankles, which were found to be swollen and one was slightly erythematous. This was followed by gyrate and ringed patches of erythema, which extended over the whole body. These at first were well defined, of a pinkish tint with a pinkish fawn-colored central area. Some of the lesions soon assumed a dusky, cyanotic tint which developed into petechiæ. This was followed by the appearance of bullæ, first seen about the neck, and which within a few days involved, more or less, the entire body. The contents of the bullæ, at first transparent, gradually took on a yellowish color. Later many of the lesions became slightly hemorrhagic. The patient's condition began to fail, and finally, three weeks after the injury and a fortnight after the onset of the disease, he died. Cultures from the purulent and hemorrhagic bullæ gave pure streptococci. The autopsy revealed old fibrinous adhesions about the spleen, and the gross appearance of this organ was found more dense than normal. Small hemorrhagic spots were found near the pyloric end of the stomach. At the cardiac extremity, a small area was found denuded of gastric epithelium. There was no evidence that the gunshot wound had any etiologic influence on the disease. The case seemed to demonstrate a connecting link between erythema and purpura.

Dr. Corlett's paper was discussed by DRS. OSCAR T. SCHULTZ, of Cleveland, and EDWARD H. SHIELDS, of Cincinnati.

THE NEED FOR HIGHER REQUIREMENTS IN EXAMINATIONS IN DERMATOLOGY AND SYPHILOLOGY BY MEDICAL COLLEGES AND LICENSING BOARDS.

DR. WILLIAM F. BREAKEY, of Ann Arbor, Mich., said the relative number of patients, clinical and private, suffering from dermal affections, as compared with other special fields of medicine, seemed to furnish a sufficient reason why a general medical education should provide better facilities for the study of dermatology, and of syphilis, in particular, not alone because of its gravity and often unsuspected presence, but also in

view of the awakened public interest in this phase of social life.

Dr. A. Ravogli, of Cincinnati, said that in all of the medical colleges in the State of Ohio, at least sixty-four of the two thousand hours that made up the yearly college curriculum, had to be devoted to dermatology and syphilology. Medical students were already overburdened with work, and he did not think they would ever succeed in compelling the candidates to take a special examination in these branches.

(To be continued.)

Book Reviews.

Physical Diagnosis, with Case Examples of the Inductive Method. By Howard S. Anders, A.M., M.D., Professor of Physical Diagnosis, Medico-Chirurgical College, Philadelphia, etc. New York and London: D. Appleton & Co. 1907.

Why have a new book on Physical Diagnosis? The author's reason is given in the following paragraphs of the preface:

"In my teaching experience it has appeared that the average medical student tends to neglect or misapprehend the intrinsic importance of two things, namely, technic and reason. He is inclined to exhibit a superficial and hasty zeal and endeavor to get at the physical signs somehow, but without methodic and patient procedure and practice; and his mental drift is toward jumping at conclusions from insufficient data and insufficient correlation.

"It is the double-barreled purpose of this book, its dual *raison d'être*, to counteract, as far as textbook influence may (of course less potent than the personal power of the teacher), this deficiency in the student body of our medical colleges."

This tendency certainly exists in the student body, encouraged rather than otherwise by the personal influence of those diagnosticians who, neglectful of method, make short cuts to brilliant diagnoses and thereby fail to emphasize the importance of method. This form of teaching is encouraged by the conditions of out-patient departments in which students work far more rapidly than their mental poise and fundamental preparation justify.

How does the book seek to correct this recognized evil? First, it insists on a necessary preliminary training. "Obviously, the perceptive powers cultivated in the laboratory, the technical skill acquired in handling instruments of precision, and systematic procedures thereby inculcated and ingrained are hardly less than absolutely necessary to modern conditions of intellectual preparedness for successful results in this most objective department of general medical diagnosis." Second, the inductive method is illustrated by cases and their discussion in two chapters, one on pulmonary, the other on cardiac, disease. These two chapters represent the main difference between this book and numerous others on physical diagnosis. They are undoubtedly a valuable addition in showing the student how to study his cases.

The general procedures of physical diagnosis and the interpretation of physical signs, as might be anticipated, do not differ greatly in handling from that in other books. They are quite thoroughly discussed and, on the whole, satisfactorily. Well chosen illustrations, borrowed in the main from other books, help to elucidate the discussion. The book is well made and its pages show careful editing and revision. However, a paragraph of 162 words all in one sentence on page four seems to have escaped attention; here some judicious division would clarify the meaning. Still, there is very little to invite adverse criticism, and Dr. Anders's book can be accepted as a useful addition to the series of smaller works on physical diagnosis, some one of which every student should possess.

A Textbook of Physiological Chemistry. For Students of Medicine and Physicians. By Charles E. Simon, M.D., Professor of Clinical Pathology in the Baltimore Medical College. New third edition. In one octavo volume of 490 pages. Philadelphia and New York: Lea Brothers & Co. 1907.

This third edition differs only slightly from the second edition, such changes having been made as were necessary to bring the volume up to date.

Dr. Simon presents the subject of Physiological Chemistry in an attractive way, taking up the three classes of food-stuffs, their digestion, assimilation, metabolism and excretion, and also the products of various glands and organs. The work is adapted to the use of the student as a laboratory manual and textbook, and to the physician as a book of reference.

Five-Hundred Suggestions, Practical Brevities in Surgical Diagnosis and Treatment. By Walter M. Brickner, B.S., M.D., Chief of Surgical Department, Mt. Sinai Hospital Dispensary, New York; Editor-in-chief, *American Journal of Surgery;* and Eli Moschcowitz, A.B., M.D., Assistant Physician, Mt. Sinai Hospital; Associate Editor *American Journal of Surgery.* Second series, duodecimo. 125 pages. New York: Surgery Publishing Company. 1907.

This little book is worth the dollar charged. In spite of various reviewers' tiresome statements that it is "snappy," and full of useful "diagnostic wrinkles," it is worth owning. It abounds in such aphorisms as occur countless times in the discourse of a clever clinical lecturer: "In seeking a cause for torticollis don't fail to examine the teeth"; "Pyuria without symptoms is suspicious (*sic*) of an early tuberculosis of the urinary tract"; "The silver-fork deformity is by no means necessary to the diagnosis of Colles's fracture"; "Crochet needles are most useful for lifting buried stitches out of a sinus"; "Patients will appreciate the use of black bandages for the scalp — where they are comparatively inconspicuous, and for the hands — where they do not soil," etc., to the limit of the 500.

THE BOSTON

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REPORT OF SURGEON-GENERAL, UNITED STATES NAVY.

THE report of the Surgeon-General of the United States Navy for the fiscal year 1907 again brings to attention certain facts of general interest to the medical profession. Among these is the question of recruiting the medical corps to its allotted strength. It appears that in 1905 there were thirty-eight vacancies; in 1906, forty-four; and in 1907, fifty-eight. From this it is apparent that conditions are not improving, and that the authorities are experiencing greater and greater difficulty in finding acceptable recruits for the medical corps. As at present constituted, there are only about 260 medical officers available for the care of over 43,500 officers and men of the navy and marine corps. It is evident that this force is inadequate to the needs of the service, and that criticism may well result. Although much has been done of late to remove causes which have deterred suitable medical men from entering the medical corps of the navy, there are still certain defects to be met. It is admitted that the duties of the naval surgeon are manifold and exacting, and that the men who fill this position should be physicians of sound body and well-equipped minds. Such men are evidently difficult to obtain, as shown by the fact that the number of qualified candidates falls far short of the demand. Of forty-three applicants examined within the last year, only nineteen have qualified for the positions sought, showing on the one hand that a high standard for admission is maintained, and on the other that many men of somewhat inferior qualifications apply.

We have again and again commented on the reluctance of men to enter the medical service, both of the army and navy. In spite of the great overcrowding of the profession in the large cities and the evident opportunities for a career of usefulness and possibly of discovery, recent graduates in medicine remain reluctant to undertake this service, although, as stated above, many of the restrictions have been removed which have hitherto stood in the way of an army or navy career. There should be no reason why the military branches of the government service should not have an excellent medical representation. It remains for those in authority, assisted by Congress and an enlightened attitude in Washington, to remove the remaining defects of the service and to create the necessary enthusiasm among men of promise in the profession.

This report in convincing fashion shows the advantages which a medical man in the navy may enjoy in the way of post-graduate work, hospital service and membership in medical associations. Everything is being done to bring the medical corps of the navy into closer relation with the profession at large, and there is, therefore, no further reason for a man entering the navy to regard himself as isolated from the remainder of the profession. The recently published *Naval Medical Bulletin* should do much toward making the work of medical officers of the navy known and bringing them into touch with the great body of investigators in the medical field.

One of the curious conservatisms, which it is apparently exceedingly difficult to overcome, is the prejudice against the appointment of dentists for service in the navy. For five years consistent and repeated recommendations for legislative authority to employ dentists has failed of enactment. The arguments in favor of their appointment are so apparent and convincing that it would seem that an enlightened Congress must forthwith take favorable action. That this has not been the case is an excellent example of the difficulties under which the medical service of the navy labors in accomplishing reforms. It is to be hoped that a bill, drafted and submitted Sept. 20, will be reported favorably. The question of women nurses has also been most carefully considered by the naval authorities, and recommendations made that such a service be established. Here, again, the necessary legislative authority has not been forthcoming, in spite of what seems to us unanswerable arguments regarding the advisability of establishing such a corps as a part of the medical department of the navy.

If the service is to be made attractive and de-

sirable for promising medical men, it is evident that, so far as possible, the same medical advantages in hospital and on board ship be offered them as are attainable by their colleagues in civil life. It is also apparent that the conservatism which still prevails toward progress in the naval medical corps must give place to a more liberal policy, which makes none but absolutely necessary distinctions between naval and civil medical service. We have no doubt that the situation will finally be adjusted, but while the necessary legislative action is pending, the medical branch of the navy continues to suffer. A reading of the report in its detail is well worth the time of members of the medical profession and of the laity interested in the consistent progress of medicine.

THE CLINICAL TYPES OF CARCINOMA OF THE LARGE INTESTINE.

On account of the variable situation, pathological nature and the relationship that it presents with the various abdominal viscera, carcinoma of the large intestine, if exception is made of the rectum, may affect the most varied clinical aspects. Mickulicz, Boas and Bovis have given various classifications of its symptomatic modalities, but recently Jouffray (Thesis, Lyons, 1907) has again taken up this classification and made it more satisfactory. One must distinguish a type characterized by severe diarrhea. This type, more special to carcinoma of the cecum, is rarely, if ever, followed by symptoms of obstruction. The general condition is greatly affected, while palpation will often allow one to discover a distinct tumor. The evolution of this form is insidious, the patient usually seeking advice on account of indistinct digestive disturbances. He loses flesh, digests badly, and not infrequently, on account of the slow digestion, vomiting arises. Slight constipation appears, and a very careful questioning, and especially a minute palpation after the gut has been emptied by a laxative, should be resorted to in order to discover the presence of a neoplasm, involving the cecum or the ascending colon.

This form, which has been called the digestive type by the above-mentioned author, may also show itself in a more accentuated manner and, under these circumstances, Jouffray has termed it the gastric type. The growth is seated in the transverse colon and involves by compression or by adhesions the pyloric vestibule. Later on, pain is complained of and soon after vomiting occurs. The entire clinical picture is that of a pyloric stenosis. A tumor is discovered and taken for the pylorus, but, nevertheless, a careful analysis of the gastric juices tends to show that this diagnosis is incorrect. Carefully questioning the patient and eliciting the fact that he complains of slight colic will put one in the way of arriving at a correct diagnosis.

The type in which constipation is marked presents an entirely different evolution. An old and increasing constipation opens the drama; it is, in the first place, relieved by laxatives or purgatives, but later it resists these and is only relieved after an attack of obstruction, whose duration is of several days. These attacks of obstruction, which are of short duration and infrequent in the first place, finally become longer in duration, and the patient soon enters into a state of chronic semi-obstruction, characterized by colic and alternating constipation and loose discharges.

At this time the clinical picture becomes completed; a tumor appears, seated over the sigmoid flexure. The end of the evolution suddenly takes place by an acute occlusion; but it must be added that, up to the time of the appearance of this acute occlusion, the clinical evolution of the affection is quite latent, so much so that the discovery of the carcinoma at operation or at autopsy usually completes the diagnosis. This is the type that the author terms the early occlusive.

Occasionally, the physical symptoms are *nil*, while the functional symptoms are reduced to the minimum of intensity, but the general condition alone is seriously involved, thus realizing either the cachectic or anemic type of the disease. Here one is dealing with a latent form, the diagnosis of which is often impossible.

In some instances, it is not the neoplasm which makes its presence evident, but inflammatory phenomena arising in its neighborhood, and infectious complications are produced locally. Soon the evolution of an abscess begins, its seat varying according to the case. One may be dealing with an anterior or iliac abscess, situated in the cecum or sigmoid flexure; an abscess in the hypochondrium arising in the cecum or infrahepatic angle of the colon; a peri-umbilical abscess starting in the transverse colon or a lumbar abscess originating in the angle of the colon.

It can easily be conceived that these various complications may, at the beginning of the process, remain unrecognized, until the time comes when they give rise to a generalized peritonitis. The diagnosis remains impossible, and is only made on the operating table. Being

aware of such symptomatological varieties, as well as their mode of development, it is readily conceived how extreme may be the difficulty of making a diagnosis of carcinoma of the large intestine. Every imaginable mistake is quite possible, and, consequently, one should be cautious, especially when the patient is in the decline of life and at the age when carcinoma is, if not a certainty, at least a probability.

COMMITMENT AND DISCHARGE OF THE INSANE.

THERE are few matters in which the responsibility of the physician is greater than in the commitment of irresponsible persons on the one hand, and their discharge from custody on the other. A recent tragic event, occurring at the Boston State House, in which a discharged inmate of a large insane hospital shot and killed one innocent man and wounded two others, again emphasizes the difficulties under which we labor in properly safeguarding the public from mentally diseased persons. The very proper legal protection thrown about a person subject to commitment to an insane hospital is, we believe, completely adequate in the great majority of cases to protect the abnormal individual from injustice. The responsibility of physicians, however, great as it often is in the process of commitment, merely begins after the suspected person has been safely lodged in a hospital. In many cases, and particularly in those constituting the dangerous class, petitions are too often circulated by misguided friends or relatives that after a reasonable period of residence and apparent restoration to mental health the person be discharged as cured, or at least as no longer a menace to his fellowmen. The difficulties surrounding the hospital authorities in the determination of this question are manifest on the slightest consideration, but are too often overlooked, especially when the public, shocked by an apparently avoidable offence, has its attention drawn to the question. Undoubtedly, experience and judgment of high degree are demanded on the part of the hospital superintendents in the final determination of granting freedom to a previously dangerous man. It is absolutely inevitable that mistakes at times should be made, however closely and conscientiously the past history of the patient may be scrutinized or his possibilities for the future contemplated. It is manifestly desirable that persons of homicidal tendency should be removed from society and kept isolated until all danger is past, and such an instance as that to which we have just alluded merely emphasizes the desirability of all possible precautions. The idea that our hospital authorities are careless or unmindful of their great responsibility, however, is not for a moment to be entertained. On the other hand, considering the number of homicidal persons, both in and out of the asylums, it is matter for congratulation that more mistakes are not made and that more tragedies do not result.

MEDICAL NOTES.

MEXICAN CONGRESS POSTPONED ON ACCOUNT OF DENGUE. — The International Medical Association of Mexico was to have met at Monterey in November for its third annual congress, but it was postponed until Jan. 23 to 25, on account of the prevalence of dengue fever at Monterey. This association combines English-speaking and Spanish-speaking physicians on an equal footing, the programs and summaries being printed in both languages, the speakers using their mother tongue. — *Jour. Am. Med. Asso.*

THE NOBEL PRIZES. — The following prizes under the Nobel foundation were distributed early this month at Stockholm, with the exception of the peace prize, which was awarded in Christiania; the prize for literature was awarded to Rudyard Kipling; physics to Prof. Albert A. Michelson, University of Chicago; medicine to Dr. Laveran, of Paris, as announced last week; chemistry, to Prof. E. Buchner, of the University of Berlin; the peace prize was this year equally divided between Ernesto Todoro Moneta, of Italy, and Louis Renault, of France. At the main award this year, there was no public function, on account of the death of King Oscar. All the recipients were present.

A NEUROLOGICAL HOSPITAL AT BLACKWELL'S ISLAND. — We are requested to announce that at the suggestion of the New York City neurologists, Hon. Robert W. Hebbard, the progressive administrator of public charities, has established the first neurological hospital in America.

The details of hospital organization have just been completed, and a medical board formed. The new hospital is to be known as the Hospital for Nervous Disease of New York City. It is located on Blackwell's Island in detached pavilion wards near the City Home. The present capacity of the hospital is 250 beds. Buildings for the further accommodation of 100 patients are in process of erection. The medical staff will be divided into ten services. Each service will consist of a senior attending physician and

two assistants. The services are to be continuous and permanent. The general hospitals of the city already possess more than a thousand neurological patients awaiting admission to the service. The hospital will be provided with thoroughly equipped laboratories for diagnostic and therapeutic research. Ample facilities for giving special lectures and demonstrations in neurological science will be provided.

The Medical Board is composed of the following: Drs. Francis A. Scratchley, Pearce Bailey, Smith Ely Jelliffe, Joseph Fraenkel, William B. Pritchard, J. Ramsay Hunt, Graeme Hammond, William Leszynsky, L. Pierce Clark, president, and E. L. Hunt, secretary.

The consultants are Drs. C. L. Dana, E. D. Fisher, George W. Jacoby, B. Sachs, Joseph Collins, Frederick Peterson and M. Allen Starr.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 18, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 56, scarlatina 35, typhoid fever 4, measles 36, tuberculosis 43, smallpox 0.

The death-rate of the reported deaths for the week ending Dec. 18, 1907, was 23.79.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 14, 1907, was 298, against 231 the corresponding week of last year, showing an decrease of 67 deaths and making the death-rate for the week 25.50. Of this number 151 were males and 147 were females; 293 were white and 5 colored; 182 were born in the United States, 110 in foreign countries and 6 unknown; 59 were of American parentage, 208 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 66 cases and 4 deaths; scarlatina, 35 cases and 0 deaths; typhoid fever, 4 cases and 4 deaths; measles, 26 cases and 1 death; tuberculosis, 77 cases and 23 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 53, whooping cough 0, heart disease 30, bronchitis 14 and marasmus 6. There were 13 deaths from violent causes. The number of children who died under one year was 53; the number under five years, 75. The number of persons who died over sixty years of age was 86. The deaths in public institutions were 76.

There were 4 cases and 2 deaths reported from cerebrospinal meningitis during the week.

Lynnfield, Mass., Schools Closed on Account of Measles. — An epidemic of measles has appeared in Lynnfield, Mass., which has led to the closing of the schools by orders of the Board of Health. It is stated that on Dec. 16, nine different grades with an enrollment of two hundred pupils were attended by only six.

Boston Society of Medical Sciences. — At a meeting of the Boston Society of Medical Sciences, held at the Harvard Medical School, Dec. 17, a paper was read by Dr. W. H. Park, of New York, on "The Value of the Opsonic Index in Regard to Treatment." Drs. Timothy Leary, James H. Wright and Cleaveland Floyd were among those who took part in the discussion.

NEW YORK.

Centenarians. — George Olley, believed to be the oldest person in New York State, died at his home at Great Bend, Jefferson County, in the vicinity of Watertown, on Dec. 7, at the advanced age of practically one hundred and ten years. This great age is apparently well authenticated, as the records are preserved of his birth in Stanton, England, on Dec. 25, 1797. He came to Jefferson County in 1826.

Mrs. Annie Friemark, of Brooklyn, N. Y., died at the alleged age of one hundred and one years. She was a native of Russia, and her husband was a lumber dealer of Minsk. She had been in America for only twenty-two years.

Oysters. — In view of the uneasiness which has of late been prevalent in the public mind on account of the supposed danger from oysters, the authoritative statement just made by Dr. William H. Park, of the Health Department's bacteriological laboratory, is reassuring. Dr. Park has found that only one tenth of 1% of cases of typhoid fever can be traced to contaminated shell-fish.

Diphtheria Epidemic on Randall's Island. — The first intimation to the public that there had been an epidemic of diphtheria among the inmates of the House of Refuge on Randall's Island was given when the newspapers announced that in the early hours of Dec. 12, 4 out of 25 of the boys suffering from the disease, who had been removed about three weeks previously to the Willard Parker Hospital for treatment, had made their escape from the hospital.

A Threatening Fire. — There was an exciting time at a fire which occurred on the evening of Dec. 13, in the Huyler chocolate factory, at Eigh-

teenth Street and Irving Place. More than thirty firemen were overcome by smoke, and while a number of them were sent directly to Bellevue Hospital, it was found necessary also to establish an emergency hospital in the annex to the package and storage building of the plant. Here, in a small room on the sixth and uppermost floor, five ambulance surgeons from Bellevue, under the direction of Dr. Reiss of the Fire Department, were working hard for three hours in reviving the overcome firemen. The floor of the improvised hospital was covered six inches with water, and the air was heavy with noxious smoke, but the surgeons remained pluckily at the post of duty and the firemen were constantly revived and sent back to fight the flames. It was the only way in which men could be found to handle the blaze. In one instance, three firemen were found senseless on the floor together, still holding to the line of hose. One of these was carried down to the street and placed in an ambulance by a policeman, but, as the ambulance surgeon was busy in the building, the driver refused to start without him; whereupon, the energetic policeman jumped on the box, and himself drove the ambulance to Bellevue Hospital. At the hospital it was stated that it was well that there had been no delay in the case, as the condition of the man was found so serious that death might result. Among the seven hundred girl employees, who were doing overtime work in preparation for the holiday trade, there was something of a panic, but fortunately they all escaped from the building in safety.

SMALLPOX AT KINGSTON, N. Y. — An outbreak of smallpox has occurred at Kingston, N. Y., 25 cases having developed in the ten days preceding Dec. 14. A characteristic of the epidemic is the mildness of the disease, and in consequence of this, it gained more headway than would otherwise have been the case. In many of the earlier cases, physicians failed to recognize the true nature of the trouble, probably mistaking it for chicken-pox, and, in fact, it was not absolutely established that the disease was smallpox, until State Bacteriologist Curtis arrived and made culture tests. On the other hand, it is stated that, later, a considerable number of cases which had been diagnosed as smallpox were found to be really instances of the less serious disease. The infection is believed to have been brought to Kingston by some negro laborers who recently came from the South to work in the brickyards there.

Current Literature.

MEDICAL RECORD.

NOV. 16, 1907.

1. HEMMETER, J. C. *Diseases of the Gastro-Intestinal Tract on the Borderland between Surgery and Internal Medicine.*
2. ROSE, J. T. *Skin Grafting without Anesthesia.*
3. BRUSH, A. C. *The Relationship of Trauma to Insanity.*
4. TALMEY, B. S. *Cryptorchism Complicating Imbecility.*
5. EISING, E. H. *Radiograph of a Mummified Foot.*

THE NEW YORK MEDICAL JOURNAL.

NOV. 16, 1907.

1. TAYLOR, J. M. *Relief of Nutritional Disorders by Developing the Abdominal Supports.*
2. ROSE, A. *Gastric Diseases.*
3. GLEASON, J. H. *Prostatic Hypertrophy and Its Treatment.*
4. LEONARD, C. L. *The Protection of the Roentgenologist.*
5. *HOLT, J. M. *Amebic Dysentery (Chronic), a Surgical Disease.*
6. HENRY, J. N. *Arterial Thrombosis and Gangrene Following Typhoid Fever, with Report of Two Cases.*
7. NEWMAYER, S. W. *Acute Idiopathic Pulmonary Edema.*
8. WILLIAMS, J. R. *On the Occurrence of Indican, Albumin and Casts in the Urine.*
9. BEVERIDGE, J. W. *Microscopic Traumatic Gangrene.*
10. POND, A. M. *An Improved Rapid Method of Imbedding Histopathological Specimens in Paraffin.*
11. SOULES, S. G. *A New Treatment of Diabetes Mellitus.*

5. Holt insists that cases of amebic dysentery are to be treated by daily colon irrigations of quinine (1 in 3,000 to 1 in 500). These irrigations are to be given only in the knee-chest position, and preferably by a physician. If the amebæ persist in the stools after a year of colon irrigations, appendicostomy should be performed and the colon flushed out daily with quinine solution. The operation is not serious. There is no difficulty in closing the sinus after the amebæ have disappeared from the stools. The writer reports three cases of amebic dysentery with appendicostomy. The duration of the disease before operation was two, four and nine years. Recovery followed in each case. [R. I. L.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

NOV. 16, 1907.

1. PRINCE, M. *The Criminal Responsibility of Insane Persons.*
2. *GORDON, A. *Alcoholic Insanities. A Study of Four Hundred and Thirty-seven Cases.*
3. HAND, A. *The Disadvantages of Low Proteids in Infant Feeding.*
4. SEIBERT, A. *Prophylaxis in Epidemic Cerebrospinal Meningitis.*
5. WILBERT, M. I. *Materia Medica and Pharmacy in Hospital Practice.*
6. *LYDSTON, G. F. *Intravenous Treatment of Syphilis.*
7. WILLIAMS, L. R. *Plea for Physical Examination of All School Children.*
8. *ERDMAN, S. *Aeropathy or Compressed Air Illness among Tunnel Workers.*

2. Gordon presents the results of the study of 437 cases of alcoholism. Of these 160 were acute, 277 chronic alcoholism. The cases of acute alcoholism presented good recoveries, and although seen in recurring attacks, no sign of oncoming dementia was observed. Chronic alcoholism, although not absolutely incurable, leads almost inevitably to dementia. However, from his observations, melancholia, mania, paranoia, and general paresis cannot be the product of alcoholism, either acute or chronic.

6. Lydston has employed the intravenous injection of mercury in ten cases of syphilis. A number of these had failed to yield to mercury by mouth or inunction. The results were eminently satisfactory. He used $\frac{1}{4}$ to $\frac{1}{2}$ gr. of the bichloride of mercury (6 to 25 minims of a 2% solution). Daily injections were given until the disease was under control, then the interval was gradually increased. Any prominent and accessible vein may be used. The

writer cautions against keeping on the tourniquet (which is applied to render the vein prominent) after the injection is begun; otherwise cauterization of the vein and phlebitis may occur.

8. Erdman reports 1419 cases of aeropathy (generally known as caisson disease) which occurred during the construction of the East River tunnels in New York. All these patients were affected on coming out of the pressure. The symptoms, which come on usually within an hour, were as a rule pains in extremities, less often vertigo and headache. Paralyses were present in 21 cases, most of which cleared up within a few hours. Two cases persisted, and resulted fatally after several months. The total mortality was less than 1%. Out of the 7 autopsies, free bubbles of gas were found in the blood of 5. In the other 2 cases, autopsy was delayed over eighteen hours after death. From the autopsy findings, animal experimentation, and two clinical cases, in which gas was aspirated from deep tissues, the writer is inclined to the gas emboli theory of the causation of this disease. The treatment is recompression, which gave relief to all but 8% of his cases.

[R. I. L.]

Bulletin of the Johns Hopkins Hospital.

November, 1907.

1. Thayer, W. S. *On the Importance of Simple Physical and Psychical Methods of Treatment.*
2. Meyer, A. W. *The Physician and Surgeon in Shakespeare.*
3. *Fabyan, M. *Epidemic Pneumonia.*
4. Calvert, W. J. *Displacement of the Heart by Pleural Pressure.*
5. Calvert, W. J. *Compensatory Venous Congestion.*
6. Slemons, J. M. *Eclampsia without Convulsions.*

3. Fabyan reports an epidemic of acute pneumonia in a family of ten within ten days. Six of the ten had definite signs of lobar pneumonia. Two others, including the father, who was the first one sick, gave a typical enough history of pneumonia, but had recovered before they were examined. Only one case was fatal. Pneumococci were recovered in this case, both from the blood during life, and from the blood and consolidated lung at autopsy. On careful examination of the home surroundings, no special etiological factors were found to account for this unusual contagiousness of pneumonia.

[R. I. L.]

The Lancet.

Nov. 23, 1907.

1. Schiff, E. *Lecture on Treatment of Epithelioma with Roentgen Rays.*
2. *Shattock, S. G., Seligmann, C. G., Dudgeon, L. S., and Panton, P. N. *Contribution to the Study of the Relationship between Avian and Human Tuberculosis.*
3. *McGavin, L. H. *Notes of Four Cases in which Filigree-Implantation was Successfully Applied to Abdominal Herniæ, Previously Considered Incurable.*
4. *Western, G. T. *Treatment of Bacterial Infections by Vaccines.*
5. Greene, W. H. C., and Owen, E. *Fatal Injury to the Bladder during an Operation for Femoral Hernia.*
6. Wylie, A. *Treatment of Innocent Laryngeal Growths by the Galvano-Cautery.*
7. Milward, F. V. *Rectal Carcinoma Treated by a Modification of Witzel's Colostomy, and Three Weeks Later by the Extirpation of the Entire Organ by the Vaginal Route.*
8. Fitzgerald, G. W. *An Interesting Case of Tubal Abortion.*
9. Castellani, A. *Observations on the Treatment of Yaws (Frambesia).*
10. Jones, W. B., and Mackintosh, J. S. *A Case of Cardiac Disease.*
11. Evans, T. J. C., and Newbolt, G. P. *A Case of Gastro-enterostomy with Complications.*

2. This article is a preliminary report of work on the relationship between avian and human tuberculosis. The authors conclude that the human tubercle bacillus is pathogenic to the pigeon in a very limited degree. It sets up no disease of the intestine or abdominal viscera when introduced with food into the alimentary tract, and when injected into the muscles or subcutaneous tissues, it induces merely a local and glandular disease. The avian tubercle bacillus, as tested from various kinds of birds, is pathogenic to the guinea pig in a very limited degree. The human bacillus is not convertible into the avian by inoculation into the bird, *i. e.*, the bacilli are not identical.

3. McGavin reports four cases in which he used silver filigree in abdominal herniæ, which were considered incurable. He gives the details of the operation in these cases and describes the filigree which he uses. His results were very gratifying in each case. He places the filigree between the peritoneum and the fascia of the rectus muscles. He believes that this is the simplest, quickest and surest means of curing cases of this kind.

4. Western gives a description of his work done in the inoculation department of the London Hospital, in the treatment of bacterial infections by vaccines. He describes the development of this method of treatment, and gives in detail his way of preparing vaccines for inoculation. In tuberculosis, he uses Koch's new tuberculin (T. R.) diluted with .85% solution of sodium chloride, to which is added lysol in the proportion of .25%. His customary initial dose for an adult is now from 1-3000 to 1-2000 of a milligram. He speaks first of treatment of infections with the tubercle bacillus; out of 250 cases dealt with in two years, 200 were cases of tuberculosis in some form. He then tells of the work which he has done in treating tuberculosis affecting the skin and mucous membrane. The difficulty he has had with these is that, while in most tuberculous affections one may rest assured that a vaccine injected subcutaneously will reach the affected part by the blood stream, in cases of tuberculosis of the skin (lupus) there is often so much indurative scar tissue and such a sluggish circulation that one cannot be at all sure that the active agent has reached the spot which it is supposed to benefit. On this account he advises treatment with the Finsen light along with inoculation treatment. He has seen several hitherto intractable cases cleared up by this procedure, although the tendency to relapse seems to be very great. His cases of tuberculous ulceration of subcutaneous tissues and skin, and those of erythema induratum have all done well under inoculation treatment. He has had 30 cases of tuberculous infection of lymphatic glands; 4 of these have shown no improvement; in 8 cases, the glands have entirely cleared up, and in the others there has been a marked improvement. Out of 15 cases of tuberculous disease of the bones, 7 were cured and 5 cases showed marked improvement; 3 showed no improvement. Out of 11 cases of tuberculous disease of the joints and synovial sheaths, 7 are either completely cured or show very great improvement; 2 show no improvement. There were 15 cases of tuberculous disease of the epididymis; of these 6 are cured; 4 are greatly improved and one only has shown no improvement. Twelve cases of acne inoculated with the staphylococcus have shown remarkable improvement. Nine cases of furunculosis have been cured, as well as several cases of intractable carbuncle; 2 cases of cystitis due to the colon bacillus have been greatly benefited; 2 cases of streptococcus endocarditis terminated fatally. On the whole he believes that vaccine treatment at no distant period will rank among the most potent weapons of therapeutics.

[J. B. H.]

British Medical Journal.

Nov. 23, 1907.

1. Cunningham, H. H. B. *Clinical Lecture on Some Types of Conjunctivitis.*
2. Kelly, J. M. *A Critical Study of Organic Preparations of Silver in the Treatment of Conjunctivitis.*
3. Barr, J. S. *An Investigation into the Frequency and Significance of Optic Neuritis and other Vascular Changes in the Retinæ of Patients Suffering from Purulent Disease of the Middle Ear, with the Results of the Examination of the Eyes and Ears in 100 Consecutive Cases.*
4. Ackland, J. M. *Relation of Dental Surgery to General Medicine.*
5. *Still, G. F., Owen, E., and Turner, J. G. *Discussion on the Causes, Effects and Treatment of Dental Disease in Children.*

6. ACKLAND, W. R. *Notes on some Cases of Neuralgia.*
7. BAKER, A. W. W. *Difficult Eruption of the Third Molar.*
8. BENNETT, F. J. *Some Anatomical Results of Efficient Mastication.*
9. COLYER, J. F. *Irregularities of the Teeth in Animals.*
10. *FAIRBANK, H. A. T. *Sarcomata of the Jaws.*
11. FORSYTH, D. *Relation between the Thyroid and Parathyroid Glands.*
12. MACLENNAN, A. *The Place of the Spirocheta Pallida in the Diagnosis of Syphilis.*
13. CASTELLANI, A. *Note on the Spirocheta of Yaws (Spirocheta Pertenuis).*
14. CASTELLANI, A. *Note on a Bacillus Found in a Case of Gangrenous Appendicitis.*
15. COOMBS, C. *Myocardial Lesions of the Rheumatic Infection.*

5. Statistics show that 80% to 90% of school children have some decayed teeth. Still believes that common digestive disorders of childhood are often dependent upon caries of the teeth, preventing thorough mastication, and that malnutrition is a direct result. Tubercle bacilli have often been demonstrated in carious teeth, and such teeth are undoubtedly one of the causes of tuberculous glands. Whether the glands are infected directly from bacilli present in the carious teeth or not is, perhaps, open to question, but there is no doubt that the presence of suppurating matter in carious teeth may infect the glands, and thereby render them very much less resistant to a tuberculous infection. He believes that decayed teeth are a very real danger to the child whose family history or whose own past history shows a tuberculous tendency. Dental caries is often a cause of habit spasm and epilepsy. Various constitutional headaches are cured by attention to the teeth. He does not believe that candy has such a harmful effect as is usually supposed. In regard to the prophylaxis, he thinks it too late to wait until the child goes to school before giving attention to the teeth, but that this should be done in earliest infancy. He believes that a regular inspection of the teeth of children by a dentist, two or three times a year, will often prevent trouble which at a later period may be very serious.

10. Fairbank has made a study of 140 cases of sarcoma of the jaw, which he has collected from the literature. Microscopical examination of the tumor has been made in every case. The youngest case, one of melanotic sarcoma, was only one month old when the tumor appeared; the oldest, one of myeloma, was seventy-one. Forty per cent of the cases were under twenty years of age. As with sarcoma in other situations, chronic irritation seems to play an important part in the etiology. In only 10 cases out of the 140, however, is mention made of previous caries of the teeth, although this need not alter the fact that teeth are not infrequently the cause of new growth. Out of these 140 cases, 57 were of the myeloid variety and 17 round-celled. The myeloid type were by far the most benign, and at operation required no such radical measures as were needed in the presence of the other more malignant varieties.

[J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 41. OCT. 10, 1907.

1. RIEDEL. *Displaced Right Kidney Fastened by Adhesions in an Abnormal Position.* (Continued article.)
2. *HOCHHAUS. *Cholelithiasis and Glycosuria.*
3. FORNAT, SCHERESCHEWSKY, J., EISENZIMMER, AND ROSENFELD. *Specific Precipitates in Lues, Tabes and General Paralysis.*
4. *CONRADI, H. *When is Typhoid Fever Contagious?*
5. *ROEDER, PAUL. *Resection of Large Nerve Trunks without Paralysis.*
6. MINTZ, W. *Removal of a Button from a Bronchus.*
7. *SCHÄFFER, F. *Percussion in the Treatment of Pseudarthrosis.*

2. For some years, Hochhaus has examined the urine for sugar in all cases of cholelithiasis, with only one positive result. In this case, a patient with no previous history of diabetes, during a sudden and severe gallstone colic, showed 3.3% sugar in the urine, which continued from 0.4% to 0.5%, the next five days, and then disappeared altogether. In another case of a man fifty-three years old, with a mild diabetes of about a year's standing and sugar varying from 1% to 5%, after a series of gallstone attacks, the sugar entirely disappeared, and has never returned, although the patient is on an ordinary diet. Glycosuria has been known to subside after other diseases, but this is the first case on record after an attack of gallstones.

4. Conradi, from the examination of over 600 cases of typhoid fever, shows that a large proportion of the cases of contact infection must have occurred during the first week of the primary sickness or earlier, assuming the average period of incubation to be ten days. In 85 cases in which the contact infection was most certain, it occurred in the first week of the disease in 49 cases; in the second, in 16; in the third, in 10; in the fourth, in 5; in the fifth, in 3; and in the sixth and seventh, 1 each. If the incubation is longer than ten days, then infection from the primary case must have occurred before the first symptoms were observed. Conradi is convinced that early contagion plays an important and hitherto disregarded part in the transmission of typhoid fever.

5. Roeder says that a number of instances have been reported in which the resection of peripheral nerve trunks has not been followed by the usual sequelæ. So far, there is no satisfactory explanation of the occurrence. It has been suggested that, as is the case with blood vessels, collaterals may form and take up the function of the divided nerves. In the author's case, two neuromas were removed from the upper arm and shoulder of a young woman. In order to extirpate the tumor, it was necessary to resect a portion of the ulnar nreve, the distal end being grafted into the median nerve trunk. The next day, on removing the dressing, it was found the patient had perfect control of the arm. A year later, another similar, but much larger growth was removed from the pelvis, and in so doing the anterior crural nerve had to be sacrificed. Here again no impairment of function followed.

7. Schäffer recommends that in cases of delayed union after fractures, owing to deficient callus formation, the bone in the neighborhood of the break be subjected to forcible percussion with the ulnar side of one or both hands. Since the idea is to stimulate periostitis and the process of repair, the blows employed must not be more vigorous than those used in massage. The author quotes some successful cases, and claims that this method has the great advantage that immobilization is not required during the treatment, and that the patients do not object to the procedure. [L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 41. OCTOBER, 7, 1907.

1. STRAUSS, H. *The Molecular and Ion Concentration, and the Radio-activity of Mineral Waters.*
2. *HEDINGER, M. *New Contributions on Intravenous Injections of Strophanthin.*
3. BENEKE, R. *The Nucleus Icterus in the Newborn.*
4. *SCHMOLL, E. *Motor, Sensory and Vasomotor Symptoms Arising from Coronary Sclerosis.*
5. VEIT, A., AND WEDERHAKE, K. J. *The Morphology of Certain Constituents of Urine and Bile.*
6. FUKULA, V. *Treatment of Iritis, Iridocyclitis and Blenorrhea Neonatorum.*
7. PHILIP, C. *The Use of Ichthyol in Gonorrheal Epididymitis.*
8. FLÖRCKEN, H. *An Umbilical Hernia Containing the Appendix.*
9. HOHMEIER, F. *Transverse Tear of the Pancreas, Operation, Recovery.*
10. BAUER. *Two Cases of Dementia Paralytica Complicating Pregnancy; Successful Delivery.*
11. SCHNEIDER, W. *A Case of Repeated Cesarian Section, after Rupture of a Uterine Scar.*
12. LENGFELLNER, K. *Technic of Taking Celluloid Impressions in Flat Foot.*
13. *KRÖNIG, B., AND GRAUSS, C. J. *Anatomical and Physiological Observations in the First Thousand Cases of Spinal Anesthesia.* (Concluded.)

2. Hedinger, following the work of C. Fraenkel, has used intravenous injections of strophanthin in cases of heart disease with broken compensation. He finds that the

results from this method of treatment are very quick and sure. The cases reported which have had chills and temperature after the injections were undoubtedly due to the strophanthin solution being infected. There is no need for this, as the solution can be sterilized. Strophanthin is constant in its action, and does not seem to lose its strength on standing, and cumulative symptoms are never seen. The author believes that 1 mgm. of strophanthin intravenously in the twenty-four hours is much more valuable in broken compensation than the old digitalis treatment.

4. In the observation of a large number of cases of angina pectoris, Schmoll has found that the symptoms may be divided into sensory, motor and vaso-motor manifestations. These are: (*a*) sensory pain, a feeling of impending death, numbness of arm, or arm and leg, etc.; (*b*) motor — irritative or paretic: contraction of the intercostal pectoral or abdominal muscles on the one hand, weakness of the left hand and arm on the other; (*c*) vaso-motor — the left arm or the left half of the body may be blanched during the attack, owing to a contraction of the vessels of the part. Between the attacks these manifestations are less marked, but they are still present, if sought for carefully. Hyperesthesia of the skin over the area of pain during the attack, slight weakness of the part, blanching or cyanosis between the attacks are almost the rule. These symptoms can be traced to one or more spinal segments, usually between the eighth cervical and second dorsal. Schmoll accepts Mackenzie's theory that the irritation proceeding from the heart along the sympathetic to the spinal cord, sets up an irritation there, which in turn is referred to the periphery.

13. Krönig and Grauss have made a large number of observations, on the cadaver and on living subjects, as to the effect of the position of the body, the effect of anesthetic fluids of various specific gravities, and as to the best place for injecting in spinal anesthesia. They find that the position of the body has a great influence on the fluid in the spinal cord, and that it should be controlled during the injection of the anesthetic by an "indicator tube," which they describe at length. The specific gravity and temperature of the injected fluid play a most important part in its absorption. Great care should be exercised in injections with the pelvis raised, as a serious condition may arise if the anesthetic comes in contact with the medulla. They have used both stovain and novocain, the former of which they prefer. When suprarenal extract is used, it must be a fresh preparation. The authors recommend injections of scopolamin-morphin combined with spinal anesthesia for abdominal operations, in order to calm the patient.

[R. D.]

BERLINER KLINISCHE WOCHENSCRIFT. No. 41. OCT. 14, 1907.

1. *FRIEDBERGER, E. *A Method of Making the Complement Stable.*
2. *OESTREICH, R., AND STRAUSS, H. *The Presence and Meaning of Certain Histologic Changes in the Gastro-Intestinal Tract in Pernicious Anemia.*
3. *HIRSCHFELD, H. *Erythemia and Erythrocytosis.* (*Polycythemia*).
4. WOLFF, H. *The Question of Abducens Paralysis after Lumbar Anesthesia.*
5. MEYER, A. *A Method of Opening Peritonsillar Abscesses.*
6. GOLDSCHEIDER. *The Percussion of the Apices of the Lungs.* (Concluded.)

1. Friedberger has found that by the addition of NaCl to serum containing a complement, the stability of the complement is much increased, and it will keep its strength very much longer. The author has no explanation to offer as to the cause of the action of NaCl in this instance.

2. Oestreich and Strauss have shown in an earlier work that in pernicious anemia there is an increase in lymphatic tissue and in lymphocytes in the gastro-intestinal tract. According to the researches of others, this condition is found only in pernicious anemia. A new set of researches seems to point to a relation between the number of lymphocytes in the blood stream and this process in the intestine. So far, it has been impossible to link the symptoms of the disease and these histologic findings together.

3. Hirschfeld reports five cases of polycythemia or plethora vera, with autopsies. In all there was an enormous increase in the amount of blood, and the marrow was found in a hyperactive condition, resembling grossly the marrow of a leukemia. The blood in life usually showed an increase in the number of white cells proportionate to the increase in the number of reds. No blasts were seen in the blood-stream, though always found in greatly increased numbers in the marrow. The author suggests that this condition be called erythemia, and that the condition in which there is an increased red count, but without enlargement of the spleen or changes in the marrow, be classified as erythrocytosis.

[R. D.]

DEUTSCHES ARCHIV FÜR KLINISCHE MEDIZIN. BD. 90, HEFT 5 AND 6.

1. *OTTEN, M. *Staphylomycosis.*
2. *GERHARTZ, H. *A Study of Stethoscopes.*
3. *KAPPIS, M. *Perforation of an Aortic Aneurism into the Pulmonary Artery.*
4. *STURSBERG, H. *The Relation of the Systolic and Diastolic Blood Pressure to Exercise, with Special Reference to its Use as a Functional Test of the Heart.*
5. *PFEIFFER, W. *Acute Sublimate and Oxalic Acid Poisoning.*
6. *GEIGEL, R. *The Tympanitic and Non-tympanitic Percussion Note.*
7. PFEIFFER, W. *A Case of Polycythemia without Splenic Tumor.*

1. In 1903, Lenhartz published an account of 33 cases of staphylomycosis. Since that time 22 additional cases have occurred in the same clinic, and are here reported by Otten. Of the total of 55 cases, 11 were cases of infection with staphylococcus albus, the remainder with staphylococcus aureus. Of the 55 cases only 11, or 20%, were fatal. The portal of entry in these cases was either a furuncle or other lesion of the skin, some lesion of the mucous membranes, osteomyelitis, or in some cases no definite portal of entry was discoverable. In 18 of the 55 cases a furuncle or carbuncle formed the starting point, while in 11 it began with an osteomyelitis. In all of the cases except 6, multiple abscesses resulted. Of the 6 in which there was but a single demonstrable abscess formed, three times it was a paranephritic abscess, twice a brain abscess, and once a liver abscess. In 14 of the cases, an ulcerative endocarditis resulted, six times of the mitral valve, four times of both aortic and mitral valves. In some of the cases diagnosis without blood culture would have been almost impossible.

2. Gerhartz has made a study of the various methods which have been tried to intensify the various sounds listened for in physical examination. Resonators and such methods fail in that they do not increase the intensity of the sounds without changing their character, since they cannot intensify more than a small part of the tones which go to make up the complex sounds which we hear in auscultation of the chest. Consequently, the best that can be accomplished with a stethoscope is a prevention of the dissemination of the sound waves into the surrounding air, and a conduction with as little loss as possible. The parabola construction of the stethoscope bell theoretically offers some advantages in that it focuses parallel sound waves at one point, but in actual use it does not appear to have any very great advantage over the stethoscope bells of ordinary construction. In auscultation, it is to be borne in mind that certain sounds are transmitted poorly by any form of stethoscope, and can be heard best by immediate auscultation, a method which should always be employed in conjunction with the use of the stethoscope.

3. Kappis reports at some length a case of aortic aneurism perforating into the pulmonary artery. In addition, he has collected 32 cases from the literature, 29 of which he has analyzed. In all of these there was evidence of a severe cardiac lesion with sudden onset in most, and very varying objective and subjective symptoms. All but two were in males. The important points in the differential

diagnosis of this condition are: (1) the sudden beginning of severe cardiac symptoms; (2) definite signs of an aortic aneurism (these may be absent since the aneurism most likely to perforate into the pulmonary artery is a small one situated just above the aortic valves); (3) a thrill felt strongest or solely at the base of the heart on the left side; (4) murmur heard in the same region. If the latter is continuous, there is a very strong evidence of a perforation, particularly if the phenomenon has developed during the course of observation of the case. If with signs of aneurism a continuous murmur or a murmur extending from systole to diastole is heard, the condition is very apt to be this one, though a pulmonary aneurism with open ductus arteriosus may produce the same signs.

4. Stursberg has made extensive studies in the relation of systolic and diastolic blood pressure to exercise, in order to determine whether such observations might not be of use in distinguishing organic from functional cardiac lesions. It is found that there are certain limits within which blood pressure and the cardiac output vary under normal conditions, after a graded amount of work. If these same limits are found in cases with cardiac disturbances, it is probable that these disturbances are of a nervous rather than an organic nature. However, there appear to be exceptions in sufficient number to deprive the method of very great use in diagnosing these very important forms of cardiac disease.

5. Two cases of sublimate poisoning and one of oxalic acid poisoning have been studied in relation to the urinary disturbances which result. These cases show first a polyuria of short duration, followed by a suppression of urine, which is gradually replaced by a second period of polyuria which continues until albumin and casts have disappeared from the urine. During the earlier stages of the condition there is an increase of body weight, resulting from the retention of water, though this retention is not accompanied by edema. There are also changes in the secretion of the inorganic salts.

6. Geigel continues the discussion from a preceding paper, of the physical explanation of percussion sounds. In the preceding paper he has explained the metallic percussion note as due to the discontinuous vibration of an elastic body which in vibration produces high over-tones. With a lower grade of discontinuity of vibration, the non-tympanitic note results, whereas the tympanitic note is the result of continuous vibrations started by a percussion blow. [H. A. C.]

ARCHIV FÜR KLINISCHE CHIRURGIE.

BD. 82, HEFT. 3.

1. v. AUFFENBERG, F. R. *Suture and Lateral Dislocation of Nerves.*
2. GERDES. *Experimental Investigation into the Steam Sterilization of Dressings.*
3. MOSCHCOWITZ, A. V. AND E. *A Report on 2,000 Cases of Appendicitis.*
4. HENKING, R. *The Cases of Appendicitis at Marburg from 1893 to 1906.*
5. GOLDSCHWEND, F. *Operations on Rectum and Uterus by the Sacral Route.*
6. HOFFMAN, M. *Clinical Manifestations in Gastro-Intestinal Pseudoleucemia.*
7. NEUPERT. *Retroperitoneal Pelvic Tumors.*
8. HEERMAN, G. *Asepsis in Oral and Nasal Surgery.*
9. RASUMOWSKY, W. I. *N. I. Pirogoff.*
10. POCHHAMMER. *Experiments on Gastro-enterostomy, Entero-anastomosis and Resection of the Intestine.*
11. v. BERGMANN, V. *A Case of Teratoma of the Upper Jaw.*
12. HELLIN, D. *Bilateral Empyema.*
13. v. HABERER, H. *Bone Cysts and Fibrous Ostitis.*
14. HAGLUND, P. *Fracture of the Epiphyseal Center of the Calcaneus in Youth.*
15. KEMPF, F. *Idiopathic Retropharyngeal Abscess.*
16. RICHTER, P. *Who First Used Burnt Sponge for Goiter?*
17. VOGEL, K. *The Technic of Amputation of the Breast.*

BD. 82. HEFT 4.

1. *EKEHORN, G. *The Importance of Anomalous Renal Vessels in the Causation of Hydronephrosis.*
2. *KÜMMELL, H. *Prostatectomy.*
3. HEDREN, G. *Lipomatosis of the Urinary Bladder with Non-Traumatic Rupture.*
4. BORCHARD. *Incarceration of a Duodeno-Jejunal Hernia in Connection with a Meckel's Diverticulum.*
5. MARTINI, E. *New Method of Operating for Inguinal Hernia with Removable Sutures.*
6. *ROVSING, T. *Extirpation of the Urinary Bladder with Bilateral Lumbar Ureterostomy.*
7. *NYROP, E. *The Significance of the Retention of Food in the Stomach.*
8. *FRIEDRICH, P. L. *Surgery of the Lungs.*
9. *BURKHARDT, L. *The Influence of Saline Infusion on the Action of Chloroform during and after Narcosis.*
10. SIMIN, A. N. *A New Method of Gastro-enterostomy.*
11. DELITZIN, S. N. *Combined Drill and Plane Trephine (Stoll's Rhychanotrepan).*
12. OPOKIN, A. A. *Pneumotomy in Russia.*

1. Ekehorn reports the case of a patient who had had recurrent renal colic for six years. The attacks had increased in frequency and severity since the last pregnancy. Abdominal palpation revealed an enlarged kidney, situated somewhat lower than normal. Pressure on the abdomen by pushing the kidney upward, relieved the pain. At operation, the only cause of the trouble which could be found, was an accessory artery, entering the kidney just above its lower pole, and about which the ureter was looped. The artery was removed, the patient having no further trouble. Twenty-four similar cases are collected from the literature, emphazing the fact that such anomalies of the renal vessels are not very rare, and that they may cause trouble if the kidney becomes displaced.

2. Kümmell advises the in-lying catheter in cases of incomplete or complete retention of urine without complications. If this does not answer the purpose, after a short time, prostatectomy should be done. The operative risk of prostatectomy, whether by the suprapubic or perineal route, is about the same in his hands. Cancer of the prostate is more common than has been heretofore supposed. A cystoscopic examination should always be made, and if the prostate protrudes more into the bladder than toward the rectum, the suprapubic method should be employed for its removal, whereas if it protrudes most markedly toward the rectum, the perineal route should be chosen. Contra-indications to prostatectomy are advanced arteriosclerosis, diffuse bronchitis, renal insufficiency and entire loss of the contracting power of the bladder. Under conditions such as the above, operation should not be undertaken except for malignancy.

6. After removal of the bladder by shelling it out unopened, having divided the ureters with the cautery, Rovsing brings them both out through the back, through a small incision at the margin of the erector spinæ muscle, about 8 cm. from the middle line. A catheter is inserted into each ureter, and the wounds dressed for a week or so, when the exposed portion of the ureter has dried and shrivelled up, and the remaining portion has become firmly united in its new location. Rovsing then removes the catheter, and controls the flow of urine by an apparatus which consists of a belt containing two silver cups situated over each ureteral orifice, and emptying into a rubber urinal worn below the pubes. He reports the case of a woman of thirty-four years, who has worn a belt for nearly a year, with no discomfort and no leakage. By the above procedure, he feels that the bladder can be removed without danger of contaminating the abdominal cavity, since the operation is done extra-peritoneally; also by bringing the ureters out in the lumbar region, there is not nearly the same danger of renal infection as exists when they are implanted into the rectum or vagina.

7. Nyrop has examined 202 cases of gastric disturbances by the Bourget test meal. He emphasizes the fact that the presence of any portion of this meal remaining in the stomach after twelve hours, means serious disturbance in the function of this organ and calls for a laparotomy in every instance. In 75 of the patients examined, although there was marked evidence of gastric disease, there was no demonstrable retention. From his exhaustive examination of the subject, he concludes that whether the retention be due to malignancy or not, and no matter how slight it may be, it should always be an indication for laparotomy.

8. In the very suggestive article of Friedrich, the present status of lung surgery is reported. The pneumatic cabinet is mentioned as being indispensable. Several instruments are illustrated, and the opinion stated that the technic of such surgery being so little known at present, no one should attempt its application on the human without having had a considerable experience in animal experimentation.

9. Burkhardt finds that the infusion of salt solution up to 2,000 cc. before the administration of chloroform is of great benefit in mitigating the toxic effects of that drug. He feels that it does this by diluting the blood, so that its coefficient of absorption is diminished, while the normal pressure is retained. The beneficial effects are especially noticed in the condition of the pulse during the anesthesia this remaining full and strong, even after prolonged administration of the narcotic. Subsequent nausea, vomiting and headache are also much reduced. The infusion should be given as shortly before the operation as possible. Given after the administration of the chloroform, it has practically no effect.

[W. C. Q.]

Revue de Chirurgie.

October, 1907.

1. Massabuau, G. *The Histologic Structure and Embryonic Origin of Mixed Tumors of the Salivary Glands.*
2. *Patel, M. *Sigmoiditides and Perisigmoiditides, Simple Inflammatory Affections of the Sigmoid Flexure.*
3. Dieulafé, L., and Herpin, A. *Lesions Connected with the Wisdom Tooth.*
4. *Delore, X., and Chalier, A. *Contribution to Thyroid Surgery.*

2. The term sigmoiditis was first applied by Mayor, ten years ago, to an intrinsic inflammatory process in the sigmoid. Patel now reviews the history of the disease, which he distinguishes as a pathologic entity from specific or secondary conditions such as dysentery, syphilis, tuberculosis or ulcer. Etiologically, chronic constipation, worms, foreign bodies, and general disease are predisposing factors. Anatomically, the most important element is the occasional presence of multiple diverticula, which are starting points of infection analogous to appendicitis. Perforation of one of these may lead to perisigmoiditis, with or without abscess. Various clinical forms are described and discussed.

4. From a personal series of 73 cases, Delore and Chalier make a clinical classification of benign thyroid tumors, exclusive of exophthalmic goiter, into simple goiters and suppurative goiters. The former are chiefly cystic, often with hemorrhagic contents; the latter are generally due to infection of such a cyst, though they may represent a true primary or secondary thyroiditis. Symptoms of thyroid disease may occur without manifest tumor, which in this case may be retrosternal. The authors believe that early operative interference is usually desirable, even before the appearance of functional or pressure disturbances, owing to the liability of benign goiters to undergo malignant degeneration. They find enucleation generally possible, and always preferable to strumectomy or thyroidectomy. They do not think ether contra-indicated or tracheotomy necessary, and have had little trouble from hemorrhage or from injury to the recurrent laryngeal. Suppurative goiters they treat by incision and drainage, after which a secondary strumectomy may be done, but is seldom needful.

[R. M. G.]

Miscellany.

FREE PUBLIC LECTURES ON MEDICAL SUBJECTS.

The Faculty of Medicine of Harvard University offers a course of free public lectures, to be given at the new buildings of the Medical School, Longwood Avenue, Boston, Saturday evenings at 8, and Sunday afternoons at 4, beginning Jan. 4, and ending April 26, 1908. No tickets are required. Following is a list of the lectures and their subjects, with dates:

Jan. 4. Some recent discoveries in the physiology of digestion. (Illustrated by lantern slides and zoetrope demonstrations.) Dr. Walter B. Cannon.

Jan. 5. Human gait. (Illustrated by lantern slides.) Dr. Edward H. Bradford.

Jan. 11. The modern crusade against typhoid fever. Dr. Elliott P. Joslin.

Jan. 12. Common salt. Dr. Lawrence J. Henderson.

Jan. 18. The causes of nervous and mental disease. Dr. Philip Coombs Knapp.

Jan. 19. Fatigue: Its effects and its treatment. Dr. George A. Waterman.

Jan. 25. Nervous disorders of children. Dr. William N. Bullard.

Jan. 26. Nervous breakdown during adolescence and adult life. Dr. James J. Putnam.

Feb. 1. Some of the nervous disorders of adult life, with especial reference to "habits." Dr. Edward W. Taylor.

Feb. 2. Popular fallacies regarding insanity and the treatment of the insane. Dr. Henry R. Stedman.

Feb. 8. Alcoholism and insanity. Dr. Charles P. Bancroft.

Feb. 9. The ear and the telephone. Dr. Clarence J. Blake.

Feb. 15. The interest of the public in surgical progress. Dr. James G. Mumford.

Feb. 16. The sick child. Dr. Thomas Morgan Rotch.

Feb. 22. The causes of disease in infants and children. Dr. Charles Hunter Dunn.

Feb. 23. Rational infant feeding. Dr. John Lovett Morse.

Feb. 29. Syphilis: Its nature and dangers. Dr. James C. White.

March 1. Smallpox and vaccination. Dr. John Hildreth McCollom.

March 7. The problem of the "nervous temperament" in children. Dr. George A. Craigin.

March 8. Florence Nightingale and the beginning of surgical nursing. Dr. J. Bapst Blake.

March 14. Modern methods for the care of the insane. (Illustrated.) Dr. Owen Copp.

March 15. The relation of the hospital to the community. Dr. Abner Post.

March 21. Mental hygiene and the prevention of insanity. Dr. George T. Tuttle.

March 22. Psychic treatment of disease: Its limitations and uses. Dr. Richard C. Cabot.

March 28. What the people should know about tumors. Prospects of cure of malignant disease in the light of our present knowledge. Importance of early co-operation on the part of the laity. Dr. Howard A. Lothrop.

March 29. The development and maintenance of good teeth. Dr. Charles A. Brackett.

April 4. The inflammations due to the commoner pus germs: Their local and general effects. Blood-poisoning. Dr. Charles A. Porter.

April 5. Certain dangerous popular delusions concerning grave surgical diseases. Dr. Maurice H. Richardson.

April 11. Foods in health and disease. Dr. Maurice Vejux Tyrode.

April 12. The development of the microscope. Dr. Harold C. Ernst.

April 18. Some preventable diseases of the skin. Dr. Charles J. White.

April 19. The relation of animal life to human diseases. Dr. Theobald Smith.

April 25. The cocaine evil. Dr. Charles Harrington.

April 26. Tumors. Dr. William T. Councilman.

Also, Laboratory Exhibits in rooms 201 and 202 (Building D):

(1) Paintings and photographs illustrating the changes in so-called chronic rheumatism. Dr. Edward H. Nichols.

(2) An exhibit of certain bacterial and animal parasites, and of organs which show the anatomical changes produced thereby; for example, in typhoid fever, meningitis, diphtheria, anthrax, pneumonia, tuberculosis, dysentery, smallpox, etc. Drs. Frank B. Mallory and S. Burt Wolbach.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 30, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	9	5
Chicago	—	—	Waltham	7	2
Philadelphia	—	—	Pittsfield	7	2
St. Louis	—	—	Gloucester	—	—
Baltimore	—	—	Brookline	2	—
Cleveland	—	—	North Adams	5	0
Buffalo	—	—	Chicopee	8	5
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	2	—
Providence	—	—	Hyde Park	2	0
Boston	201	39	Melrose	3	1
Worcester	33	11	Newburyport	—	—
Fall River	49	15	Woburn	4	1
Cambridge	28	3	Marlboro	2	1
Lowell	33	11	Westfield	2	—
Lynn	31	8	Peabody	—	—
New Bedford	22	7	Revere	3	1
Springfield	20	4	Attleboro	4	1
Lawrence	22	6	Clinton	3	2
Somerville	17	5	Adams	—	—
Holyoke	23	6	Gardner	2	—
Brockton	10	3	Milford	2	—
Malden	10	2	Watertown	5	1
Chelsea	11	1	Plymouth	—	—
Salem	16	5	Weymouth	1	0
Newton	10	1	Framingham	3	—
Haverhill	17	5	Southbridge	5	2
Fitchburg	5	3	Wakefield	—	—
Everett	7	1	Webster	—	—
Taunton	15	3			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED DEC. 4, 1907.

BLUE, RUPERT, passed assistant surgeon. Detailed to attend the meeting of the State Health Officers of California, at Riverside, Dec. 3, 1907.

ROBERTS, NORMAN, assistant surgeon. Granted leave of absence for 7 days from Nov. 22, 1907, under paragraph 191, Service Regulations.

ROBERTS, NORMAN, assistant surgeon. Granted extension leave of absence for 23 days from Nov. 29, 1907. Nov. 30, 1907.

FROST, W. H., assistant surgeon. Granted leave of absence for 1 day, Nov. 24, 1907, under paragraph 210, Service Regulations.

MULLAN, E. H., assistant surgeon. Granted leave of absence for 4 days from Nov. 26, 1907, on account of sickness. Dec. 4, 1907.

DEVALIN, HUGH, assistant surgeon. Granted leave of absence for 1 month from Dec. 16, 1907. Nov. 30, 1907.

DYNAN, N. J., acting assistant surgeon. Granted leave of absence for 7 days from Nov. 30, 1907, under paragraph 210, Service Regulations.

KEATLEY, H. W., acting assistant surgeon. Granted leave of absence for 3 days from Nov. 3, and 5 days from Nov. 13, 1907, under paragraph 210, Service Regulations.

GOODMAN, F. S., pharmacist. On being relieved from the Jamestown Tercentennial Exposition, directed to report to the medical officer in command at Baltimore, Md., for temporary duty and assignment to quarters. Dec. 4, 1907.

HOLSENDORF, B. E., pharmacist. Directed to proceed from San Juan to Mayaguez, Porto Rico, for temporary duty, upon completion of which to rejoin his station. Nov. 29, 1907.

RYDER, L. W., pharmacist. Granted leave of absence for 7 days from Nov. 21, 1907, under paragraph 210, Service Regulations.

APPOINTMENTS.

DR. CHARLES W. HUGHES was appointed an acting assistant surgeon for duty at Baltimore, Md., Nov. 29, 1907.

DR. CHARLES W. NAULTY, Jr., was appointed an acting assistant surgeon for duty at Perth Amboy Quarantine Station, N. J., Nov. 29, 1907.

BOARDS CONVENED.

A board of medical officers was convened to meet at Seattle, Wash., Dec. 2, 1907, for the purpose of making a physical examination of certain detained immigrants. Detail for the Board: Passed Assistant Surgeon L. E. Cofer, Chairman; Passed Assistant Surgeon M. J. White, and Acting Assistant Surgeon F. R. Underwood, Recorder. Nov. 30, 1907.

Boards of medical officers were convened to meet Dec. 6, 1907, for the purpose of making physical examinations of certain officers of the Revenue-Cutter Service to determine their fitness for promotion, as follows:

At San Francisco, Cal., Surgeon H. W. Austin, Chairman, and Passed Assistant Surgeon C. H. Gardner, Recorder.

At Port Townsend, Wash., Passed Assistant Surgeon M. J. White, Chairman, and Acting Assistant Surgeon F. R. Underwood, Recorder.

At Newport News, Va., Assistant Surgeon G. L. Collins, Chairman, and Acting Assistant Surgeon A. C. Jones, Recorder.

At Boston, Mass., Surgeon R. M. Woodward, Chairman, and Assistant Surgeon T. W. Salmon, Recorder.

At Portland, Me., Surgeon P. C. Kalloch, Chairman, and Acting Assistant Surgeon A. F. Stuart, Recorder.

At Mobile, Ala., Surgeon G. M. Guiteras, Chairman, and Acting Assistant Surgeon J. O. Rush, Recorder.

At Detroit, Mich., Surgeon Fairfax Irwin, Chairman, and Assistant Surgeon C. W. Chapin, Recorder.

At Galveston, Tex., Passed Assistant Surgeon G. M. Corput, Chairman, and Acting Assistant Surgeon W. H. Gammon, Recorder.

At Baltimore, Md., Surgeon L. L. Williams, Chairman, and Passed Assistant Surgeon J. T. Burkhalter, Recorder.

SOCIETY NOTICE.

A PROPOSED NEW ENGLAND PEDIATRIC SOCIETY.—The Visiting Staff of the Boston Floating Hospital request all those interested in the formation of a New England Pediatric Society to meet at the Boston Medical Library, 8, The Fenway, Saturday, Jan. 4, 1908, at 8.15 P.M. It is hoped that this movement will excite general interest and that the attendance at the meeting will not be limited to those working along this special line.

JOHN LOVETT MORSE, *Chairman.*
WILLIAM E. FAY.
ARTHUR WILLARD FAIRBANKS.
CHARLES W. TOWNSEND.
HENRY I. BOWDITCH, *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Mt. Sinai Hospital Reports. Vol. V. For 1905 and 1906. New York. 1907.

Cancer of the Stomach. By A. W. Mayo Robson, D.Sc., F.R.C.S. Illustrated. New York: William Wood & Co. 1907.

Preventable Blindness. An Account of the Disease Known as the Ophthalmia of the New-Born, and of its Effects; with a Plea for its Suppression. By N. Bishop Harman, M.A., M.B. Cantab., F.R.C.S. England. Illustrated. New York: William Wood & Co. 1907.

The Semi-Insane and The Semi-Responsible (Demifous et Demiresponsibles). By Joseph Grasset. Authorized American edition translated by Smith Ely Jelliffe, M.D., Ph.D. New York and London: Funk & Wagnalls Co. 1907.

Oxford Medical Publications. Cancer of the Womb. Its Symptoms, Diagnosis, Prognosis and Treatment. By Frederick John McCann, M.D. (Edin.), F.R.C.S. (Eng.), M.R.C.P. (Lond.). London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1907.

Oxford Medical Publications. The Treatment of Diseases of Children. By G. A. Sutherland, M.D., F.R.C.P. London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1907.

Oxford Medical Publications. Auscultation and Percussion, together with the Other Methods of Physical Examination of the Chest. By Samuel Gee, M.D. Fifth edition. London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1907.

Oxford Medical Publications. The Skin Affections of Childhood, with Special Reference to Those of More Common Occurrence and Their Diagnosis and Treatment. By H. G. Adamson, M.D. Lond., M.R.C.P. Illustrated. London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1907.

DEC 30 1907
LIBRARY

Original Articles.

THE ATTITUDE OF THE MEDICAL PROFESSION TOWARD THE PSYCHOTHERAPEUTIC MOVEMENT.*

BY E. W. TAYLOR, M.D., BOSTON.

It must be evident to the most casual observer of medical progress that an extraordinary change has taken place within the last few years regarding the scope of therapeutics. A wider point of view has developed and a more general recognition of the applicability of methods of treatment apart from drugs. The subject which has been selected for discussion this evening offers one of the most striking examples of this expanding point of view, and requires no apology for its presentation at this meeting. It is certainly advisable in this as in other matters of present interest to the medical profession to invite discussion among a body of men who should be representative of the most matured judgment on a subject of much popular misconception. The psychotherapeutic movement within the medical profession has become a definite fact, sure of future development, which can by no possibility be checked, even were such a course desirable. Under these circumstances, it is fitting that the direction which this fundamental movement in therapeutics is to take should be guided by wisdom and encouraged with enthusiasm, tempered by judgment.

It is my purpose to omit any detailed reference to methods or to clinical experience, but rather to draw attention to the broader questions involved in the following propositions: first, the past and present attitude of the medical profession toward mental therapeutics; secondly, the present state of therapeutics in relation to the psycho-therapeutic movement; thirdly, the general attitude of special students of the subject, and, finally, the means by which a knowledge of the movement may best be disseminated.

I. Up to within very recent years, it is not to be questioned that the general attitude of the medical profession toward any method of treatment which appealed primarily to the mind was antagonistic. Those men still within the ranks of the profession, who, through choice or conviction or special training, devoted themselves with zeal to methods of treatment through mental agencies were regarded, and we confess with some reason, as beyond the pale of legitimate practice. The curious and historically interesting growth of mesmerism, hypnotism and allied methods, finally emerging in our present day rational attitude toward the entire subject, has amply demonstrated the deep-seated prejudice which the profession at large has hitherto entertained toward other than physical methods of treatment. The reaction from speculative philosophy and the identification of scientific method with material facts, which was predominant throughout the last century, has stamped itself deeply upon the medical profession, with results which have made possible the advances of the past years. The material aspect of nature has in fact always appealed to the great mass of thinking men, and no doubt will continue to do so at least for many centuries to come. In view of these facts, it is altogether natural that the medical profession should have followed close in the wake of the great scientific revival of the last century, and should in consequence find itself somewhat enthralled at the present time by this salutary but not altogether comprehensive point of view. Many of us have perhaps followed with more or less care the discussion of the modern theories of immunity as propounded by Ehrlich and his students. It is suggestive of the predominant tendency of the medical mind, to which I have referred, that in the elucidation of the theory ideas used to express the subtle interaction of chemical substances find expression in grotesque figures, which by no possibility can express the true facts; and yet to the modern scientific mind such figures constitute a satisfactory interpretation. It is unquestionably true that what is popularly known as the scientific mind finds itself incapable of getting beyond the material world in its interpretation of facts. Medicine has therefore very naturally found itself increasingly unwilling to accept with cordiality ideas and theories which demand other than a physical explanation, with the result that the psychotherapeutic movement which at various stages in the progress of medicine has emerged with more or less vigor, has hitherto for the most part been suppressed and relegated to the region of uncertainties into which the modern scientific spirit was unwilling to probe.

An admirable example of this prevailing feeling throughout the medical profession and a large portion of the more intelligent element in the laity is illustrated by an address which President Eliot of Harvard University delivered at the time of the exercises in commemoration of the opening of the new Harvard Medical School buildings. On that occasion President Eliot chose as the subject of his address, "The Future of Medicine."[1] Throughout his remarks, which traced with great acumen the development of modern scientific medicine and the growth of the laboratory spirit, no mention whatever was made of the possibility of future development in other than purely material directions. The hope of the future, which lies in a clearer comprehension of fundamental mental laws, with research along these lines, together with the great moral and social prophylaxis, which this study seems destined to develop, were absolutely untouched. I speak of this as illustrative not only of President Eliot's point of view, but also as that of the great group of scholars and thinking men of which he stands as a representative. It is likewise clear that from the standpoint of the medical profession at large no deep consciousness of the

* Read before a combined meeting of the New York Neurological Society, the Philadelphia Neurological Society and the Boston Society of Psychiatry and Neurology, at Boston, Nov. 23, 1907.

[1] Eliot: The Future of Medicine. Sanders Theater, Cambridge, Sept. 26, 1906.

possibility of the practical application of mental means to the prophylaxis and treatment of disease has as yet developed. The primary study of mental phenomena is still regarded by the rank and file of the profession with skepticism, although undoubtedly with a growing tolerance. That this is not, however, a universal fact among men of high scientific training is shown, for example, by the stimulating address of Prof. Charles Sedgwick Minot before the American Association for the Advancement of Science, in 1902, of which organization he was then president, on the subject, "The Problem of Consciousness in Its Biological Aspects." [2]

"A frank unbiased study of consciousness must convince every biologist that it is one of the fundamental phenomena of at least animal life, if not, as is quite possible, of all life. Nevertheless, its consideration has barely a place in biological science, although it has long occupied a vast place in philosophy and metaphysics. If this address shall contribute to a clearer appreciation of the necessity of treating consciousness as primarily a problem for biological research to solve, my purpose will be achieved. In an ideal world philosophers and scientists would be identical; in the actual world there are philosophical scientists and scientific philosophers, but in the main the followers of the two disciplines pursue paths which are unfortunately distinct. The philosophical mind is of a type unlike the scientific. The former tries to progress primarily by thought based on the data available, the latter seeks to advance primarily by collecting additional data. The consequence of this difference is that philosophy is dependent upon the progress of science, but we who pursue the scientific way make no greater mistake than to underestimate philosophy. The warning is needed. Data of observation are a treasure and very precious. They are the foundation of our mental wealth, but that wealth consists of the thought into which the data are transmitted. In pleading therefore for an increased observational study of consciousness, we plead not merely for science, but equally for philosophy." Page 277.

"It seems to me inconceivable that the evolution of animals should have taken place as it actually has taken place, unless consciousness is a real factor and dominant. Accordingly, I hold that it actually affects the vital processes. There is, in my opinion, no possibility of advoiding the conclusion that consciousness stands in immediate causal relations with physiological processes. To say this, is to abide by the facts, as at present known to us, and with the facts our conceptions must be made to accord." Page 281.

Professor Minot's plea is significant in relation to the general movement we are considering, since it insists on the recognition of consciousness as a fit subject for biological research. Terminology evidently is of small consequence. What we need as a profession is at the outset simply the conviction that consciousness or mind, as consciousness shows itself in its higher forms, is worthy of our most diligent study, and that by instituting such study we are not proving false to our scientific traditions.

Under the existing conditions of thought on this whole subject it is well to consider in some detail the general attitude of the medical profession toward the psychotherapeutic movement which is now evidently attracting attention from various sources. It is in the first place not to be questioned that the profession at large is becoming interested in the subject. It is, however, evident that a large part of the profession is still in deep ignorance of the real significance of the movement. Many physicians are highly skeptical of the possibility of any practical application of mental means of treatment. Many others are quite willing to listen to the new ideas, but find themselves unable through lack of detailed knowledge to make practical use of them. A comparatively small group finally is deeply interested in the possibilities of a wide application of psychotherapeutic methods, and is doing missionary work at times, possibly with an excess of zeal, toward spreading the gospel. During the past winter I have had the opportunity of speaking before several gatherings of medical men in and about Boston on the general subject. The impression I gained from the discussion which followed these informal talks was that the physicians present recognized in a vague way the possibility of mental influence, but in no instance did I find that they had ever applied modern methods with the same judgment, foresight and knowledge which they would employ in any other therapeutic endeavor. The extraordinary popular and pseudo-scientific interest in matters relating to the possible alleviation of disease by mental means, while forcing general attention, including that of the medical profession, upon the subject, has also done much to antagonize its consideration by men of scientific training. A general opposition to all such methods has too often taken the place of the close and unprejudiced scrutiny which in other matters has been the attitude of the medical profession. There has, up to very recent times, been no general enthusiasm, except among a small body of special students, who for many years have been quietly working at the problem with results which are now becoming manifest.

All this is now changing, and there is no little evidence that a wide departure from the ordinary conservatism of the medical profession may take the place of the indifference of former years. There is unquestionably a certain danger from over-enthusiasm in the present state of the public mind. It is altogether important that no steps should be taken by the leaders in this movement which are likely, on the one hand, to antagonize the conservative elements in the profession itself, and, on the other, to arouse false hopes in the minds of the people at large. Of this I shall have something more to say later. For the present, I wish merely to emphasize the fact that psychotherapy has come to be an accepted method of treatment about which as yet much ignorance prevails in the profession at large, but against which the barriers of prejudice are gradually being broken down.

Reference to the *Index Medicus* shows the

[2] Minot: The Problem of Consciousness in Its Biological Aspects. President's address before the American Association for the Advancement of Science, Pittsburg, July 1, 1902. Proceedings, 1902, li, 265–283.

interesting fact that the word "psychotherapy" as a heading appears for the first time in May, 1906, approximately a year and a half ago. Something over three years before, in January, 1903, the word "suggestion" appears for the first time. The last number of the old series, appearing in 1899, gives no special recognition to either hypnotism or suggestion. It is worthy of note that the term "psychotherapy" has taken the place of suggestion and that hypnotism remains a subject of perennial interest. From May, 1906, when the word "psychotherapy" was first used, to July, 1907, seventy-nine papers and ten books have been catalogued, relating either to hypnotism as such or to the general subject of psychotherapy. It is not to be questioned that this number of references, unless all signs fail, will be greatly increased in the years immediately to come. It is quite unnecessary, before this gathering, to refer in detail to the articles which have appeared within the past few years on the general subject, nor is this the place to discuss the value of various methods. They all have this in common that through primary attention to the mental life of the individual results of significance, both to his mental and physical health, may be secured.

II. The psychotherapeutic movement cannot be properly understood without some reference to the state of therapeutics in general. It is a time of general ferment and increased liberality in therapeutic effort. The recognition of natural agencies in combating disease — fresh air, food, water — has worked a most extraordinary change in our methods of treatment. Pharmacology and drug therapy will continue to hold an important place in the future, but by no means the predominant one which they have hitherto held. There is still, however, in the medical mind a deeply rooted feeling that drugs are the essential basis of all therapeutics. The remarkable agitation which has lately spread over this country regarding the use of proprietary medicines, and so-called nostrums, and the general note of pessimism regarding the failure of our medical students to adequately appreciate the action of drugs and to write prescriptions, is evidence of this widespread feeling. In a recent address before the Section on Pharmacology and Therapeutics of the American Medical Association, Dr. Horatio C. Wood,[3] of Philadelphia, expressed this prevailing attitude of the medical profession in the following words:

"Year after year we gather in medical societies and discuss cases showing unusual symptoms, or points of difficult diagnosis, or problems in pathology; but year after year we fail to say anything about the treatment of the disease. This section itself is an evidence of the desuetude into which the subject of therapeutics has fallen, for despite its vigorous activity in the last few years, it still remains the smallest section affiliated with the American Medical Association, whereas it should be the largest after the general Sections on Medicine and Surgery. In the face of such lack of interest among physicians in the divine art of healing, can we wonder that Eddyism, faith cures, osteopathy and all other kindred schisms flourish so luxuriantly?

"Two very different results have followed this slighting of the subject of therapeutics. On the one hand has arisen a group of nihilists, who because of their own ignorance of the value of medicinal measures, or the means of applying them, stalk up and down the world, proclaiming that all drugs are useless. On the other hand, those who have looked to the leaders of the profession for advice as to curing their patients, being turned away in scorn, have accepted the exalted accounts of those interested in the sale of drugs, and dosed their patients with unspeakable concoctions of the nostrum monger.

"With the former group I confess I have but little patience; the egotistical effrontery of an ignorant workman, who, because he does not know how to use his tools, boldly denounces the tool as worthless, excites disgust for his self-conceit rather than pity for his ignorance. To such practitioners I can only say that if they cannot treat disease they had better abandon the profession of medicine."

It is not in the least likely that physicians will be led back to the use of means which they very probably have found inefficacious by such unconsidered language as this. We need decidedly to broaden our point of view, to appreciate ourselves and to spread the doctrine that therapeutics now-a-days goes beyond the contents of the pharmacopeia, and that the failure to write a complex prescription is one of the least of the shortcomings of the recent medical graduate. A time of readjustment is at hand, and every enlightened physician should do his share toward bringing about this readjustment with equity and wisdom.

Admitting, as we must, the general widening of the therapeutic outlook, it is well to consider whither it may lead. In the first place, it is evident that the physician is coming to occupy a different place, not only in relation to his patient, but also in relation to the community at large. His advice must hereafter cover a much wider field than before the advent of the new methods. His knowledge on many matters, specialist though he may be, must be much broader than that of his predecessors, and his judgment correspondingly developed. Furthermore, it will hardly be said in the future, as it has been in the past, that the physician should not concern himself with the moral welfare of his patient, but merely with his physical condition, even at times to the extent of sacrificing morality to supposed physical needs. In the second place, the physician of the future must look beyond the individual to the social welfare of which that individual forms a part. The advance of therapeutic knowledge has made possible the treatment of groups of persons so that even the peculiarly personal relation between patient and physician will doubtless be modified in the future, though it is to be hoped never lost. I refer especially to the admirable work done by Dr. Richard C. Cabot at the Massachusetts General Hospital in developing a department of social service from a medical standpoint. This movement is significant

[3] Wood: The Place of Pharmacology in Medicine. Chairman's address, Jour. Am. Med. Asso., 1907, xlix, 1411.

of the extraordinary broadening of the therapeutic idea, and reaches out toward the complex social problems which hitherto physicians have merely touched in passing. In the third place, the physician is destined to become more and more intimately concerned with the attitude of mind which we term religion. If it be true, as we are told by Freud and the psycho-analysts in general, that primary emotions must be discovered if the physician is to do his completest work, it is evident that the emotion of religion not only cannot be overlooked but may indeed constitute a most essential object of study. If confession is good for the soul, the physician hereafter must certainly, as never before, assume the rôle of a lay confessor. I wish here, however, merely to draw attention to the apparent fact that the psychotherapeutic movement is doing much toward extending the scope of the physician's work beyond the individual into the social life of the community. However unwelcome this may be to certain ultra-conservative members of the profession, the fact must be met and fairly faced with due deference to the traditions of the profession and at the same time to the manifest claims of progress.

III. What, then, is the attitude of the best special students of the subject toward the possibilities or limitations of psychotherapeutic methods? In general, it is unquestionably one of great optimism. It is very natural that such optimism should prevail, more particularly among those whose experience justifies their claim. The recognition of hysteria as a mental disease, and the striking results which have come from an appreciation of this fact and from study directed in accordance with this idea, has done more than any other one thing to clarify our minds in relation to the practical application of mental methods. Even the pioneer work of Charcot, however, and of his brilliant follower, Janet, has made comparatively slight impression on the general medical mind. The work, nevertheless, thus inaugurated by Charcot's somewhat over-picturesque methods, has proved a source of inspiration to special students, not only in France but in all other countries as well. Its influence is doubtless felt in the later writings of such men as Mitchell, Freud, Dejerine, Janet, Dubois, Sturgis, Dana, Putnam, Walton, Sidis, Prince, Dercum and many others who have made significant contributions to the general subject.

These men, looking at the problem at different angles, may justly be regarded as pioneers in the movement which now shows definite signs of spreading widely throughout the profession. Among these writers we find much difference in the detail of method, but an impressive unanimity in the belief that the whole problem may be approached in a spirit of exact inquiry and by means which are understandable and capable of being practised with greater or less success by any one of ordinary tact and intelligence. It is a matter of extremely small consequence to our general attitude whether Freud's psycho-analytic method on a sexual basis applies to all cases, whether re-education alone is sufficient to accomplish results according to Prince and Dubois, whether substitution as advocated by Putnam or Sidis's hypnoidization is the final key to the situation.[4] It is not open to doubt that each of these methods, in the hands of its special advocates, brings about results. It is furthermore not to be questioned that the same result may be attained by different methods, and that diverse results may be attained by the same method. The one principle at stake for the present is that we have definite methods of some sort which are recognized clearly as legitimate means of treatment. In general, the attitude of special students of the subject conclusively demonstrates the inherent desire for practical methods of procedure, divested of theoretical detail.

It is clear that the work of the past few years has already brought together a mass of facts which are capable of direct application to the practice of medicine. The time has come for at least a preliminary statement of results. In stating these results it should be evident that the same methods must be employed as apply to any other problem in scientific medicine. Facts must be observed and recorded with the utmost care and circumspection and conclusions drawn with just regard to the demands of logic. It is easy to recall in the history of medicine instances in which a precipitate statement of results has led to unfortunate consequences. One recalls particularly in this connection the premature announcement of the supposed therapeutic efficacy of Koch's tuberculin. It is difficult to estimate the harm that was done through the false hopes awakened in the popular mind and so, indirectly, to the cause of medical progress in general by this premature announcement. Tuberculin has since taken its proper place among the useful agents in the treatment of disease, but only after a long period of doubt and uncertainty which might easily have been avoided had the discovery not so soon gained the public ear. In the subject we are now considering this danger is even more manifest. The popular mind is filled with

[4] Among the many papers written recently on the general subject the following not definitely referred to in other parts of this paper are of interest.

Prince: The Educational Treatment of Neurasthenia. BOST. MED. AND SURG. JOUR., 1898, cxxxix, 332. Putnam: Not the disease only, but also the man. Shattuck Lecture before the Massachusetts Medical Society, Transactions of the Society, 1899, BOST. MED. AND SURG. JOUR., 1899, cxli, 53. *Also*, A Consideration of Mental Therapeutics as employed by Special Students of the Subject. Dept. of Neurology, Harv. Med. School, 1906, i, 1, BOST. MED. AND SURG. JOUR., 1904, cli, 179. *Also*: Recent Experiences in the Study and Treatment of Hysteria at the Massachusetts General Hospital: with remarks on Freud's Method of Treatment by Psychoanalysis. Dept. of Neurology, Harv. Med. School, 1907, ii. 26, Jour. of Abn. Psych., 1906, 26. Edes: Mind cures from the standpoint of the general practitioner. BOST. MED. AND SURG. JOUR., 1904, cli, 173. Freud's papers, especially, Drei Abhandlungen zur Sexualtheorie, 1905. Sidis: Studies in Psychopathology. BOST. MED. AND SURG. JOUR., 1907, clvi, 321. Linenthal and Taylor: The Analytic Method in Psychotherapeutics, Dept. of Neurology, Harv. Med. School, 1907, ii, 145; BOST. MED. AND SURG. JOUR., 1906, clv, 541. In a personal communication, Dr. Joseph Collins states that a lecture dealing with psychotherapy, recently delivered before physicians in Scranton, Penn., will be published in the February, 1908, number of the AM. JOUR. MED. SC. Coriat: Nocturnal Paralysis, BOST. MED. AND SURG. JOUR., 1907, clvii, 47. *Also*, Some further Studies in Nocturnal Paralysis, *Idem.*, 1907, clvii, 751. Oppenheim: Psychotherapeutische Briefe, Translation by Bruce. Otto Schulze & Co., Edin., Stechert, N. Y. 1907. Camus and Payniez: Isolement et Psychotherapie. Preface by Dejerine, Paris. Felix Alcan, 1904.

ideas regarding the relation of mental processes to the alleviation of disease. Grotesque systems are everywhere about us, and have long held the stage. It is rare to find a person in whatsoever walk of life, or of whatsoever preliminary training, who has not some deep-rooted prejudice regarding the efficiency of mental therapeutics. The public mind is in an absolutely chaotic state regarding the entire question. Under these conditions the medical profession has at last actively taken the field. Misinterpretation of motive is sure to result, and a large proportion of the laity, if not of the medical profession itself, is likely to look upon the movement as a confession of defeat at the hands of the great body of irregular practitioners. It is, therefore, of the utmost importance that, in the prosecution of what seems to me one of the greatest and most beneficent tasks the medical profession has yet undertaken, we proceed with circumspection and with no vestige of precipitancy. It is certainly well to bear in mind that a cause, particularly if widely apprehended by the people at large, may easily be damaged by the excesses of over-enthusiasm. In this problem, beyond all others, the natural conservatism of the medical profession is an asset of the greatest significance. There is not the slightest danger that this awakening of the profession to the significance of the study of mental phenomena in their practical relations will again sink into obscurity, as it has so often in the past, but it behooves those of us who have the interests of the movement particularly at heart to see that no false steps are taken and that the confidence of members of the profession, as well as of the laity, be established at the earliest possible moment.

Wherein does our present attitude give promise of this consummation? Simply, I believe, in the fact that rationality has succeeded speculation, and that method has taken the place of vague generalization. The question, in other words, has now reached a stage when exact scientific methods may be applied to the elucidation of the problem. It is no less essential that we should demonstrate results in such a way as to appeal to the man of science, than that the bacteriologist should prove the capacity of a newly-discovered organism to reproduce a disease under consideration. In either instance, although the tests must be different, the method of procedure should be essentially the same. We must, in other words, rationalize the psychotherapeutic movement if we are to expect to overcome the legitimate skepticism of those whose interests lie in other fields of research. This, I believe, can now be done. The study of the inner life of the individual has reached a point where legitimate generalizations may be made and working hypotheses formulated, which, like any other hypotheses in physical science, must stand or fall under the tests of experience. If the discovery that the existence of a primary emotional state is capable of inducing a life of nervous invalidism be established as a fact, and be capable of repeated verifications, we evidently have a theory which must stand on an equal footing with a theory of immunity, or of opsonic action, or of any other hypothesis, which bids fair to yield practical results. This simple fact, therefore, that we have now established certain laws of mental action which are bearing the rigid tests of experience must be regarded as the essential entering wedge toward a general recognition of the psychotherapeutic movement as a scientific endeavor. Whether we approach the question from the biological aspect, as suggested by Dr. Minot, or from the aspect of a more abstract philosophy is a matter of relatively small significance, provided only we bring to bear upon the subject the same rigid logic which is demanded by other and material forms of research. The immediate aim of special students of the subject should, therefore, be to publish cases illustrative of definite methods; to state facts simply and without recourse to overmuch speculation; and, finally, to maintain an attitude of conservatism in the interpretation of results, such as would be demanded in any problem of physical science.

IV. How, then, may a comprehensive knowledge of the psychotherapeutic movement, as it exists in the medical profession, best be disseminated? It is evident, as I have before pointed out, that the profession is more and more taking the laity into its confidence. The tuberculosis crusade seems to have been the starting point of this movement. The facts regarding tuberculosis are so simple and so easily apprehended by persons of the most ordinary intelligence that the widest possible dissemination of this knowledge was demanded and at once brought results in improved hygiene. So successful, in fact, has been the public exploitation of tuberculosis prophylaxis that an attempt has been made, with more questionable success, to interest the public in other scourges of the human race. Popular lectures on insanity were given last winter at the New York Academy of Medicine, and a largely attended course of public lectures on varied medical topics was inaugurated by the Harvard Medical School, to be repeated this winter. The effect of such lectures is naturally difficult to determine. That they are not universally salutary is my firm conviction. The mere dissemination of knowledge of medical conditions which do not permit of immediate amelioration is a questionable policy. Is it wise to deliver to the public popular lectures on psychotherapy in the present state of the professional and popular mind? I have no desire to be dogmatic on this point, but I doubt it greatly. In such lectures the personal relation between physician and patient is naturally wholly lost, the inevitableness of misinterpretation is so manifestly apparent, and the impossibility of conveying principles of real significance is so small, that for the present I am inclined to think such public lectures should not be given.

A second means of dissemination of knowledge of the psychotherapeutic movement is through the medium of the popular press. Here again the attitude of the medical profession toward

publicity has shown a somewhat striking change within the past few years. Not many years ago an article in a popular journal bearing the name of a practitioner of medicine, if it dealt in the slightest degree with his professional work, was looked upon as a possible breach of professional etiquette. We have certainly progressed beyond this narrow point of view. There is no reason why ascertained facts in medicine should not be given the same publicity as any other matters of knowledge; and we see in the greater liberality of the medical profession in this regard a distinct sign of progress and increased usefulness. The written article differs from the popular lecture in that it presumably is more carefully prepared and presents the results of mature deliberation. Two of our colleagues have recently begun a series of such popular articles. I refer to Dr. G. L. Walton's [5] series of five popular papers on "Worry and Obsession," in *Lippincott's Magazine*, and to Dr. Frederick Peterson's [6] series of letters in *Collier's Weekly* under the general heading, "A Nerve Specialist to his Patients." It is probable that in the hands of men distinguished in the profession such presentations of well-recognized facts from a medical standpoint must, on the whole, be salutary.

In the third place, is it desirable that physicians should ally themselves with movements which primarily lie beyond the scope of the medical profession? I refer in this connection particularly to what is now very generally known as the Emmanuel Church movement in this city. Realizing the shortcomings of practical Christianity in the alleviation of many of the most distressing sufferings of mankind, the rector of this church, himself highly trained in psychology though not in medicine, conceived the idea of popularizing the psychotherapeutic movement on both its medical and religious sides. He was led in a measure to this idea through the great success of a so-called tuberculosis class conducted under the auspices of his church. Although not more than a year old, the reputation of this psychotherapeutic movement has spread widely, not only in this country, but abroad. So far as I am aware, it is the first attempt to combine a church work in which the religious side is given a predominant rôle with the regular practice of medicine. Distinguished physicians have spoken before large audiences at the public meetings given under the auspices of this movement. The attempt has been made to instil into the popular mind useful psychotherapeutic conceptions. The whole movement has excited much comment, with varying opinions as to its wisdom and results. It is not my purpose at this time either to describe the movement in detail or to venture a personal opinion as to its effect on the public welfare. As a church work, conducted by a minister who is also a highly trained psychologist, it is significant of a new and practically useful attitude of the church toward those who may be brought within the scope of its influence. From the medical standpoint, it is far less significant and may hardly be regarded as destined to have a wide influence on the psychotherapeutic movement which it should be our interest and aim to develop within the ranks of the medical profession. In any general and widely-advertised effort of this character it must be remembered that the good accomplished is more widely heralded than the possible harm. All experience has shown that in any such general appeal to the imaginations of untrained minds, psychoneurotic conditions are created as well as allayed. Whether the good counterbalances the harm is not the question at issue; whether all progress arises at the expense of certain classes or individuals in the community, likewise cannot be regarded as an argument in favor of any such movement. As physicians with the best good of psychotherapy at heart, we should not condone the development of possible neuroses on the ground that some or many individuals are helped. It is as much the function of the physician to prevent the growth of modern hysteria in any of its forms as it is to relieve the sufferer who may already be afflicted.

It is a noteworthy fact that students of psychology, irrespective of any medical training, are working in the same practical lines from their particular standpoints. I refer particularly to the work being done by Prof. Hugo Münsterberg of a therapeutic sort in the psychological laboratory at Cambridge, and to the recently established clinic of Prof. Lightner Witmer in Philadelphia. It is perfectly clear that many persons outside of the medical profession feel themselves, and no doubt are, capable of dealing with the psychotherapeutic problem. It is also evident that the medical profession at large must rise to a complete sense of its responsibility in this regard and at least do its share in the work which lies immediately before it, unless this branch of therapeutics is to pass primarily into other hands.

Where, then, should the work of disseminating knowledge really begin if it is to prove effective in the shortest possible time? I have no hesitation whatever in saying that the chief task immediately before the profession is to inform itself and be informed regarding this significant addition to therapeutic methods. It is futile for a few men, enthusiastic in their convictions, to ignore the rank and file of the medical profession in their eagerness to spread abroad the new doctrine. What is primarily required at the present time is the co-operation of all regular practitioners toward the common end. This co-operation is at present wholly lacking, and very naturally so. I venture to say that three fourths of the physicians of this state are quite unaware of the significance of the general psychotherapeutic movement or even of its existence, and this carries with it not the slightest reproach. Popular movements do not appeal to the rank and file of the profession. In fact, they are likely to excite

[5] Walton: Worry and Obsession. Lippincott's Monthly Magazine, November, 1907. The Doubting Folly, Dec., 1907.

[6] Peterson: To a Business Man Suffering from Overwork, Collier's Weekly, Nov. 9, 1907. Other letters will be: To a Woman concerning her Inebriate Son; To a Young Woman who is Depressed; To Several Women Concerning their Nervous Children.

prejudice and retard progress. There is no more reason why practitioners in remote towns should understand the bearings of this significant movement than that other groups of men should be able forthwith to calculate an opsonic index. The results and the methods of obtaining results should, however, be matters of common knowledge in the one case as in the other, and it is the natural duty of those particularly qualified to spread such knowledge. Papers should be read before medical societies, not composed of special students of the subject, but of those who are quite ignorant of it, or whose knowledge is at best vague and uncertain. In this connection it is a satisfaction to refer to such papers as Barker's,[7] read before the Association of American Physicians last year; of R. C. Cabot's,[8] before the Colorado Medical Society; of Thayer's,[9] before the Louisiana State Medical Society; and of Putnam's, before the Massachusetts Medical Society in 1900. Such opportunities should not be lost, and I have no question that the dissemination of knowledge in this way has the most widespread influence in overcoming inherent prejudices and in promulgating sanity regarding the entire subject.

Even more important, however, than such dissemination of knowledge among practitioners in medicine is the instruction of students. Just here, to my mind, lies the crux of the entire situation. Are our medical schools doing their duty in this regard? Are they in the least recognizing the great responsibility resting upon them toward sending their students into active work equipped with knowledge of the possibilities of psychotherapy? I believe not. So far as I am aware, psychotherapy as a legitimate and essential element in the student's therapeutic training is entirely ignored. We hear much, and particularly from our students, of the lack of teaching in relation to treatment. As the importance of drug therapy has declined, no adequate recognition of other forms of treatment has taken its place, and the student feels himself defrauded of one of the chief objects for which he sought a medical education. The time is certainly ripe for a change in this regard. The medical curriculum must clearly recognize the claims of the wider therapeutic movement, and among these claims none demands greater recognition than psychotherapy. In every modern medical school a course or courses [10] on this subject should be given by properly qualified persons; the word itself should find a place in the catalogue; and the student on graduation should feel that his training had positively included a recognition of mental methods of treatment, and that he can no longer plead lack of instruction, if he later fails in his manifest duty toward his patients in this element of his practical work. It is, therefore, essential that those who already see the vital importance of this therapeutic movement in the profession should do what lies in their power so to impress their convictions upon those in charge of medical education that prescribed work on psychotherapy be introduced into medical curricula. With the rise of the standard of admission to our best medical schools there has been an increasing insistence upon preliminary training. Biology, zoölogy, botany and allied natural sciences are recommended by our leading institutions as a proper if not necessary preparation for the later work in medicine. President Eliot, in the address to which I have already referred, speaks of the physician as a naturalist. After insisting upon the desirability of comparative study he goes on to say:

"Medical students should, therefore, have studied zoölogy and botany before beginning the study of medicine, and should have acquired some skill in the use of the scalpel and the microscope. It is absurd that anybody should begin with the human body the practice of dissection or of surgery; and furthermore, it is wholly irrational that any young man who means to be a physician should not have mastered the elements of biology, chemistry and physics years before he enters a medical school. The mental constitution of the physician is essentially that of the naturalist; and the taste and capacities of the naturalist reveal themselves, and, indeed, demand satisfaction, long before twenty-one years of age, which is a good age for entering a medical school. The Harvard Medical School has derived great advantages from its requirement of a previous degree for admission; but in view of the fact that many young men procure a bachelor's degree without ever having studied any science, the School needs an additional and more specific requirement, namely, a previous knowledge of biology, physics and organic chemistry, and an acquaintance with laboratory methods in all three subjects."

One naturally has not the slightest quarrel with such preliminary biological training, but it is not enough. In the future, if the profession of medicine is to retain its prestige in ministering to all human ills, it is forthwith manifest that our medical students must early be introduced to other departments of thought than those included in what we are accustomed to term the natural sciences. The prevalent idea of the physician as a naturalist will not suffer thereby. In fact, by broadening his training in branches of abstract knowledge, he should become a better and completer naturalist. However this may be, we have reached a stage of progress where the conception of an adequate medical education must be broadened to meet the insistent demands of a wide-spread therapeutic need, manifested by the extraordinary development of this so-called psychotherapeutic movement.

As a result of the foregoing analysis the following matters seem to me important: In our enthusiasm for the development of a highly significant therapeutic advance we should not allow the traditions of the profession to which we belong to be submerged. Our enthusiasm

[7] Barker: Some Experience with the Simpler Methods of Psycho therapy and Re-education. Am. Jour. Med. Sc., 1906, cxxxii, 499.
[8] Cabot: Mind Cure; its Service in the Community. Detroit Med. Jour., 1907, vii, 269.
[9] Thayer: On the Importance of Simple Physical and Psychical Methods of Treatment. Bull. Johns Hopkins Hosp., 1907, xviii, 426.
[10] Dr. James J. Putnam is this year giving a voluntary course of lectures in Psychology as Applied to Medicine, at the Harvard Medical School.

should not lead to the antagonism of any reasonable member of the profession. In our efforts toward what we regard as progress we should proceed with great deliberation and by recognized logical methods. To this end we should quote cases and exploit methods which have stood the test of experience. We should hesitate in appearing before the public with a detailed expression of our views and theories until we have secured the acquiescence of the conservative members of our own profession. We should not ally ourselves with movements over which we have no immediate control; we can ill afford misinterpretation, especially at the hands of our brother physicians. Our essential aim should be to develop a permanent interest in the psychotherapeutic movement within the ranks of the profession, and to do nothing which can in any way retard this effort. To this end we should urge reasonable but adequate recognition of the claims of psychotherapy as a legitimate and necessary element in medical education. Finally, our one object as members of a liberal profession should be to insist upon the importance of psychotherapeutic methods with an enthusiasm which should only be increased by the legitimate limitations set upon its action. By these means I believe the beneficent results which are destined to result from an acceptance of psychotherapy by the whole medical profession will soonest be attained.

THE USE OF X-RAY EXAMINATIONS IN PULMONARY TUBERCULOSIS.*

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

THE profession is now so much occupied in the study and prevention of pulmonary tuberculosis that it seems opportune to emphasize some of the results of x-ray examinations, which were begun in 1896, in this disease, and to point out again that, notwithstanding the difficulties of the method, they deserve systematic and frequent use, especially because they contribute toward making an early diagnosis and thus help to save lives and prevent the spread of the disease.

Under the term x-ray examination, I include an examination with the fluoroscope and a radiograph, the latter made during full inspiration.[1] Much experience is required to interpret what is seen on the fluorescent screen and in the radiograph, and the best results are obtained from x-ray examinations when they are made by the practitioner who also makes the ordinary physical examination. There is no danger of harm or injury to the patient in carrying out an x-ray examination if it is properly made.

This method may be useful, for example, in:

1. Making an early diagnosis.
2. Making a precautionary examination where there is a possibility that the disease is beginning.
3. Cases simulating pulmonary tuberculosis.
4. Determining the extent of the disease.
5. Determining whether it is diminishing or increasing.
6. The diagnosis of acute miliary tuberculosis and fibroid tuberculosis.
7. Recognizing central tuberculosis.
8. Recognizing sometimes an old tuberculous lesion.
9. Cases in which emphysema or asthma and pulmonary tuberculosis are associated.
10. Making an examination for cavities.

1. X-RAY EXAMINATIONS FOR EARLY DIAGNOSIS.

By the term "early diagnosis" I have in mind an earlier stage of the disease than is usually meant by these words. The x-ray signs of tuberculosis in the early stage are often a restricted excursion of the diaphragm on the affected side, due to the fact that the lung expands less fully than normal; the heart and mediastinal contents drawn by the diseased lung and pushed by the healthy lung somewhat toward the affected side in deep inspiration; the bronchial glands perhaps enlarged, especially in children; and a darkened apex of one lung, although instead of this some other part of the lung may cast the shadow. It is probable that two or more of these signs will be found very early in the disease, and the fact that a group of them may be present at this time adds greater weight to the method. The x-rays show clearly the small heart that is sometimes found in tuberculous patients in the early stages, and this may affect the prognosis unfavorably.

Diaphragm, glands and apices. Importance of quality of light in fluoroscopic examinations. — When one lung is nearly or entirely normal and the other only is affected, the difference in the maximum excursion of the diaphragm on the two sides is often great, but when both lungs are diseased, the difference may be slight. Many so-called early cases are seen when the difference in the excursion of the diaphragm on the two sides is not very marked, which may mean that the x-ray examination has not been made until both lungs have become affected. The position of the diaphragm should be traced on the skin (or on a sheet of glass or celluloid held over the chest), in inspiration and quiet breathing, and then in forced inspiration and forced expiration on both sides, and a record made of these positions for comparison with future examinations. It is well that the source of light should always be opposite the median line on a level with the lower border of the fourth rib, and about twenty-four inches from the fluorescent screen, as by this arrangement, examinations made at different times are comparable.

The glands should be examined with the light going through the body from three directions. To accomplish this object with ease, the patient should be seated in a pivoted chair.[2]

In the early stage of the disease, the practitioner has the opportunity of comparing the

* Presented at the meeting of the Association of American Physicians, held in Washington, May, 1907.

[1] The first of those I took in deep inspiration were made in 1899.

[2] See Allbutts and Rolleston's System of Medicine. The Macmillan Co., London, second edition, 1905, p. 491.

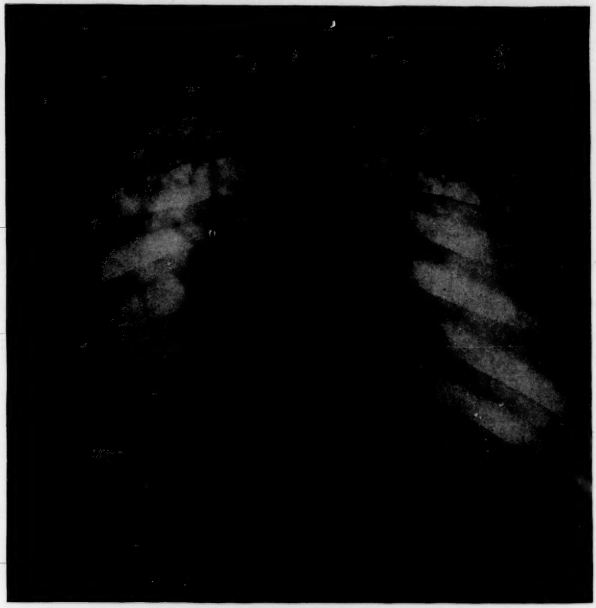


FIG. 1. — Tuberculosis of both apices. The physical signs showed trouble at the right apex only.

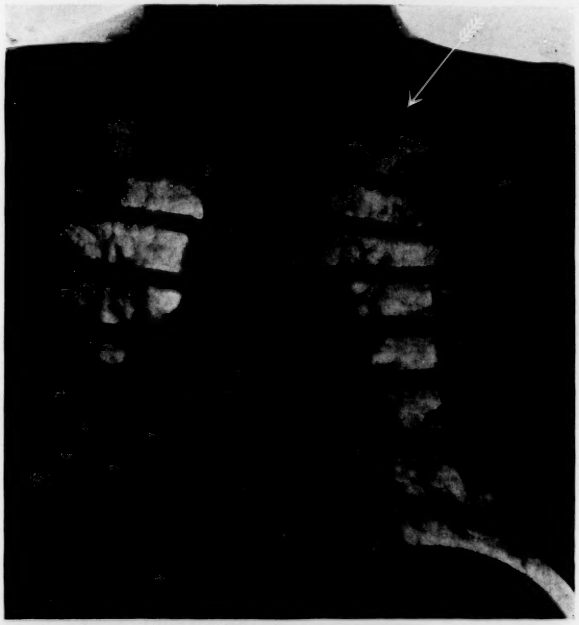


FIG. 2. — Showing small areas of calcification, probably indicating an old tuberculosis.

normal with the abnormal lung. To do this to the best advantage, the patient should take a full breath and the light should be turned down so low that it barely illumines the healthy side. When this very small amount of light is used, a slight increase in density only of the apex of the lung or other parts is necessary to shut out most of it, and, therefore, the practitioner can detect slight differences in density not revealed in any other way. Few practitioners realize the importance of using a small amount of perfectly steady light when examining the chest with the fluoroscope, and the failure to appreciate this fact may prevent them from seeing that the lung is abnormal, until the disease is much more marked. (Hyaline casts cannot be seen in the microscope if there is too much light, as is well known.) By a small amount of light, I mean, as a maximum, in many cases, so little, that five minutes is required to radiograph a hand at a distance of sixteen inches from the tube. This light should be so arranged that it can be readily turned up and down during the examination. Before using the fluoroscope, the eyes should be tested with the spinthariscope.

Radiographs. — To take radiographs of the chest quickly, a strong light is necessary.

The following case illustrates the value of the x-rays in assisting the practitioner to make an early diagnosis: A man, aged about thirty years, who had been overworked, complained to his physician of feeling listless and below par. He took a vacation and returned better, but soon began to feel as before. At this time his physician found no physical signs in his lungs and was in doubt as to whether the cause of his ill-health was tuberculosis or was due to over-anxiety and extra work. About Oct. 1, 1903, he was brought to me for an x-ray examination. He had a pulse of 72, and a temperature of 99°. His physician and I found no physical signs in the lungs at this time. The fluoroscopic examination showed that the excursion of the diaphragm on the right side was 1¾ inches, on the left side 3½ inches, and that the right apex was a little less bright than the left. It seemed wise, with his history and with these x-ray indications of pulmonary tuberculosis, that he should govern his life as if he had this disease. He therefore gave up his work and went away. I expected to see him again in a few weeks, but he did not return until January, 1904. About the middle of this month, a second x-ray examination showed that the excursion of the diaphragm on the right side was 1 inch, instead of 1¾ inches, as in October, 1903, and that the apex of the right lung cast a distinct shadow. The excursion of the diaphragm on the left side was 2¼ inches instead of 3½ inches, as in 1903, which suggested that the left lung was not in as good condition as it had been at the time of the previous examination. This patient went to the Adirondack Cottage Sanitarium, and his examination there in March, 1904, was as follows:

Palpation. — V. F. increased, right base front.

Percussion. — Good note.

Auscultation. — Right, expiration a trifle prolonged; apex, above clavicle. Few fine râles (?), and an occasional rhonchus V. R., normal. Left, fair breathing; V. R., trifle increased to second rib. Few fine râles to second vertebra spine on cough.

Fourteen examinations of his sputum were made and in no case were tubercle bacilli found.

The last examination, on Dec. 2, 1904, showed: Right, breathing better; no râles; no dullness. Left, good note and breathing; no râles.

After leaving the sanitarium tubercle bacilli were found. This patient recovered and has, I am told, been well since that time. Practitioners often suspect pulmonary tuberculosis when they do not feel justified in making this diagnosis. At such a time, x-ray examinations may afford the determining evidence earlier than the usual physical examination.

2. X-RAY EXAMINATION AS A PRECAUTIONARY MEASURE.

The wife of the patient, just mentioned, developed tuberculosis after the recovery of her husband. Precautionary examinations might well have been made in her case.

Such conditions or symptoms as the following may indicate the advisability of x-ray examinations:

(*a*) Patients whose family history suggests the possibility of this disease.

(*b*) In which the patient has been exposed to tuberculosis; for example, because some member of the family or household is or has been ill with this disease.

(*c*) In which the thermometer, as suggested by Trudeau, shows slight increase in temperature during part of the day, or after exercise.

(*d*) Hemoptysis, or loss in weight.

(*e*) Slight but persistent cough, especially in the morning.

(*f*) In which there is tuberculosis in some other portion of the body, and it is a question whether the lungs are or are not affected.

3. CASES WHICH SIMULATE PULMONARY TUBERCULOSIS.

X-ray examinations are used to advantage in these cases, as illustrated by the following instance: The diagnosis made by three physicians was pulmonary tuberculosis. The friends of the patient had presented him with a purse to enable him to go to Colorado. Before attempting to start, he came to the Boston City Hospital to ascertain how extensive the disease was. His record is as follows:

David G., aged thirty-nine years. Admitted to Boston City Hospital, Sept. 26, 1898. Pleurisy one year ago; cough for two years. Caught cold six days ago; chill, knife-like pain in left side.

Sept. 26. On admission, pleuritic pain in left side. Temperature 99.2°; pulse, 80; respiration, 23.

Sept. 29. Right apex front and behind prolonged expiration; slightly higher pitched than on the other side. Vocal resonance slightly increased, and marked whispered bronchophony. No râles

over this area, and no change in percussion. In right base behind, numerous medium and moist râles heard best with inspiration, and without change in percussion and voice sounds. No tubercle bacilli in sputum in two examinations.

Oct. 6. Patient shows some improvement. Cough nearly gone. Chief symptom is weakness and pallor. Desired to go home.

Oct. 20. Returned. Cough returned; whitish expectoration; some pain in side; appetite poor. Has had chills for three days. Temperature, 99.3°; pulse, 80; respiration, 23.

Lungs: Slight dulness at right apex in front and behind, with increase in vocal fremitus and resonance, and considerable whispered bronchophony; no râles. Question of malaria; no plasmodia found; no temperature.

Oct. 25. Feels stronger; no chills; no temperature. Coughs very little.

Nov. 5. Given 5 mgm. tuberculin.

Nov. 6, A. M. Temperature 102.5°. This temperature thought afterward to have been due to malaria, not to the tuberculin, as plasmodia were found later.

Nov. 13. Tuberculin 5 mgm. again given; no reaction.

Nov. 16. In right back tactile fremitus increased and percussion slightly duller than normal over whole of right back. On left, from apex to third rib in front, expiration is harsh and prolonged, and fremitus increased.

I made an x-ray examination of his chest and found that his lungs were clear and that the excursion of the diaphragm on the left side was 2⅜ inches, and on the right side, 2¾ inches. He deferred his trip to Colorado by my advice, and eventually gave it up altogether. I have seen him at intervals since that time and he did not develop tuberculosis. He died of cancer of the throat, eight years later, in September, 1906, at the Massachusetts General Hospital, after operation.

I think the diagnosis of early pulmonary tuberculosis should be carefully reconsidered if a properly made x-ray examination does not reveal an abnormal condition of the lungs.

4. X-RAY EXAMINATIONS IN DETERMINING THE EXTENT OF THE DISEASE.

In deciding on the best course for a patient to pursue, who has already well-marked signs of the disease, not only the condition of the patient, but the extent of the disease should be known as accurately as possible. The x-rays in many cases reveal more exactly the extent and distribution of the disease than any other method. They frequently show that both lungs are involved, when, without the use of this method, only one lung would be suspected. In other words, the x-rays indicate early the advent of the disease in the second lung as well as in the first (in such a case the advantage of comparing the normal with the abnormal lung is lost). Before admitting patients to sanatoriums as early cases of tuberculosis, they should be examined by the x-rays, for if this is not done they will sometimes be sent there with the mistaken idea that they are in an early stage of the disease.

5. X-RAY EXAMINATIONS IN DETERMINING THE DEVELOPMENT OF THE DISEASE, WHETHER IT IS DIMINISHING OR PROGRESSING.

Another use of the x-ray examination is to show with what rapidity the disease is progressing. For example, let me take the case of a patient, one of whose lungs seemed to be involved, but not to any considerable extent. The first x-ray examination showed that the disease was more extensive than the physical examination indicated, and each subsequent examination, made at intervals of two or three weeks, demonstrated that it was rapidly extending. This progress of the disease was indicated only by the x-ray examination. The physician of the patient had planned to send him to Colorado. I advised and urged that the plan be given up. He started, however, and after a fatiguing journey, resting here and there on the way, arrived in Colorado, but left for home a few days later and died ten days after reaching home. It is hardly necessary to dwell on the suffering which this man must have endured in the two long journeys, which the x-ray examinations had shown would probably be worse than useless at that time.

7. CENTRAL TUBERCULOSIS.

It is well known that central pneumonias may be readily seen by means of an x-ray examination before they extend sufficiently near to the surface of the lung to be recognized by a physical examination. The dense portion of the lung casts a shadow on the screen whether it is central or superficial. In like manner the increase in density, obtaining in pulmonary tuberculosis, is revealed by the x-rays even when deep seated.

8. OLD LESIONS.

Where we find indications of calcification, as illustrated by the accompanying figure, it should suggest an old pulmonary lesion.

9. CASES IN WHICH EMPHYSEMA OR ASTHMA AND PULMONARY TUBERCULOSIS ARE ASSOCIATED.

An x-ray examination is useful in recognizing pulmonary tuberculosis when other conditions are present which complicate the case. For example, when a patient is suffering from emphysema of the lung and pulmonary tuberculosis, the emphysema masks the ordinary physical signs of tuberculosis, but the density of the lungs is even more clearly revealed than usual, when the chest is examined by the x-rays, if the patient is also suffering from emphysema.

USE OF THE X-RAYS IN SANTORIA.

It is hardly necessary to point out, from what I have already said, that the x-rays would also assist in determining the favorable course of the disease and could be of service in sanatoria and other places where there are many patients who should have every advantage which the best

methods of examination can afford. The importance of these examinations at sanatoria has been shown among others by Brook and Green.[3] They say:

"The conclusions we arrive at are formed from the study of a large number of cases in all stages of the disease:

"1. In no single case, where the physical signs have pointed to disease, have the x-rays failed to detect the mischief.

"2. In some cases where physical signs have been absent the rays have shown a deposit in the lungs, and in these cases physical signs have subsequently been detected.

"3. That the early diagnosis is certainly helped.

"4. That the extent of the disease, in many cases, is shown to be greater than the physician thinks.

"5. That the progress and results of treatment can be watched with great accuracy."

X-ray examinations are valuable for life insurance companies.

X-ray examinations are difficult to carry out. Proper precautions should be taken to protect the practitioner as well as the patient.

Practitioners who are devoting themselves to diseases of the chest should have a suitable x-ray apparatus, just as an ophthalmologist has an ophthalmoscope, but the task of the latter is far lighter than that of the physician who desires to make a complete examination of the chest.

Practitioners who have had experience with x-ray examinations appreciate that, as a rule, they give a more definite and correct picture of conditions in the chest than any other method. This information is valuable not only in assisting the practitioner to make an early diagnosis, but also in later stages of the disease. There is now, according to some observers, an average delay of perhaps a year or more after the first symptoms of tuberculosis are observed, before the diagnosis is made. X-ray examinations assist in shortening this delay and thus help to lengthen the lives of tuberculous patients and diminish the spread of the disease. When patients realize that early diagnosis usually means recovery in a comparatively short time, and that a delayed diagnosis may exclude recovery, they will, I believe, seek x-ray examinations.

THE RESULTS OF THE CHEMICAL INVESTIGATION OF TUMORS.

BY S. P. BEEBE, NEW YORK.

During the last ten years the public interest in problems of scientific medicine has increased in large degree and many laboratories have been founded for the scientific investigation of particular pathological conditions. Nearly all of the special laboratories and funds for the study of malignant growths have had their origin during this period. You are all familiar with the remarkable advances that have been made in the application of the exact methods of chemistry to problems of biology during this same period. We need scarcely add, therefore, that our knowledge of the chemistry of neoplasms is a very modern product. However, only a small portion of the abundant tumor literature of the last decade has been devoted to chemical subjects. Such contributions as have appeared have aroused very little discussion because of their fragmentary character; and because they have formed no essential premise in the arguments regarding the nature of neoplasms, which are the chief contribution of the pathologist. The chemist has not been familiar with the past history of the tumor discussion, nor its present condition, and the pathologist has not been fully acquainted with the ways of chemistry and its language. The two are therefore just beginning to appreciate the necessity for mutual co-operation, and we find that the results of the chemist are being used more and more as a basis for the hypotheses of the pathologist. It is, I believe, a good thing that such a condition of affairs is coming, for the findings of chemistry are those of an exact science, and the personal equation is likely to cause a larger error in drawing conclusions from and properly interpreting the data of clinical and histological observations than can be admitted in an experiment where the various factors are subject to the control of the chemical balance.

In presenting the results of the chemical investigation of tumors, I shall not attempt to give a résumé of all the analyses that have been made, but I shall select those which I think are of most interest, and it is convenient to group these somewhat in the order of their complexity.

I. THE INORGANIC CONSTITUENTS OF TUMORS.

Few systematic analyses of tumors for the important inorganic elements are reported in the literature, and yet there is an abundant physiological evidence that such elements are vital factors in the proper functioning of various tissues. Four years ago, I analyzed a number of these tumors in various stages of growth and degeneration for the elements sulphur, iron, phosphorus, calcium, potassium and sodium.[1] No conclusions of great value can be drawn from these analyses, but an interesting suggestion was found in the fact that the actively growing tumors contained a much larger amount of potassium and sodium, and a much smaller amount of calcium than was found in the old, necrotic tumors. The later work of Clowes and Frisbie,[2] who analyzed a series of transplantable mouse carcinoma in various stages of their growth, has confirmed these findings.

The work of Loeb,[3] Howell, Matthews and their students, during the last few years, has revolutionized our ideas regarding many fundamental physiological processes, and has demonstrated in how great a degree vital activities are dependent upon the physico-chemical environment — an environment profoundly influenced by the nature and amount of the inorganic salts.

We know, for example, that the secreting cells

[3] A Preliminary Note on the Use of the Röntgen Rays as an Aid to the Early Diagnosis of Pulmonary Tuberculosis. Quart. Med. Jour., Sheffield, 1902, 1903, xi, 268–272.

of the intestine are stimulated to remarkable activity by the presence of potassium, and that this activity is inhibited by the exhibition of calcium. It may be that in some way a similar relation holds true for the tumor cell. It is certain that the varying quantities of these elements found in the different stages of the tumor growth are not accidental factors, but we cannot, however, on the basis of our present knowledge, say precisely what are the mechanisms concerned.

The studies of the distribution of iron, phosphorus and potassium, as carried out by microchemical reaction, have not shown any peculiarities that differentiate tumors from normal tissues. Dr. Tracy [4] has carried out a series of experiments along these lines in our laboratory, and has found that the methods are unsatisfactory, but as far as results apply, they indicate that these elements are found in tumors in similar distribution and amounts, as in any active normal tissue.

II. PROTEIDS OF TUMORS.

A considerable amount of work has been done during the last five years in comparing the character of the proteids found in malignant growths with those found in normal tissues. It seems reasonable to believe that a tissue which has such a marked peculiarity of unreasonable growth as a tumor must have some basis for this behavior in its chemical structure. There are a number of observations which indicate that a carcinoma retains some of the physiological activity of the tissue from which it developed. One need only cite the presence of iodine in thyroid tumors or the well known fact that cancers of the adrenal do not cause Addison's disease in support of this statement. One of the first observations of the character of proteids in tumors is reported by Petry [5] who salted out the nucleo-proteid, globulin and albumin from a saline extract of five carcinomas and compared the quantities found with those found in extracts of the surrounding normal tissues. His results show that the tumors were relatively richer in nucleo-proteid, and poorer in globulin and albumin than control normal tissues from which the growths had originated. These conclusions, however, are based on only two complete analyses properly controlled, so that his findings are only a suggestion. A very similar piece of work, reported by Wolff,[6] has been widely quoted as evidence that the proteids of neoplasms have a characteristic structure. Wolff separated the euglobulin, pseudo-globulin and albumin from the expressed juice of a number of tumors, and found results practically in agreement with those previously reported by Petry; but he, likewise, found that these proteids have the same precipitation limits with ammonium sulphate as those of normal tissues, and his own conclusion is that the character of the proteids is identical with that of normal tissues, and it is only the quantitative distribution of these that differentiates the tumor from the physiological tissue.

During the last year, we have carried out somewhat similar experiments upon a much larger number of specimens than either of these other men, and our conclusions are, with some minor exceptions, in accord with those of Petry and Wolff, namely, a larger amount of nucleo-proteid, less globulin, more albumin and much more non-coagulable nitrogen than is found in normal tissues. Such experiments are not suited to determine the character of the proteid, but only give information as to the distribution of the proteid in its various forms, and thus they throw some light on the pathological processes in the tissue but are of no value in differentiating between proteids which must be so closely related.

The large quantity of nucleo-proteid found in a tumor corresponds with the histological structure, and a large quantity of non-coagulable nitrogen is the logical sequence of the autolytic processes of such tissues. The distribution of nitrogen in the tumor extract varies within wide limits, depending upon the state of the tissue as regards necrosis and also depending upon the method of preparing the extract.

It is well known that many tumors suffer an impairment and, in some instances, a complete stoppage of the circulation of blood and lymph in the central portions of the growth. As a consequence of this impaired circulation, necrotic processes ensue and conditions are favorable to autolysis with an accumulation of autolytic products. It is known that aseptic autolysis at body temperature proceeds very much faster than antiseptic autolysis, where the enzymes are exposed to the injurious action of some bacterial poison, such as chloroform, toluol or sodium fluoride. In the central necrotic portions of a large tumor, there is a mass of tissue at the body temperature, free from bacteria, rich in enzymes, free of the inhibiting influences of the circulating blood and uninjured by chemical antiseptics. Such conditions are almost ideal for autolytic activity, and we find evidences that such action takes place in the amido-acids found in the extracts of such tumors. I have already published analyses of extracts from a series of sterile tumors, obtained fresh from operation, in which I found the products characteristic of cleavage by digestive enzymes, a striking instance being the finding of considerable amounts of glycocollnin, a carcinoma growing in the broad ligament. Autolysis is a process of gradual hydrolysis and with its progress a proteid has less and less of a colloid character, and consequently requires a higher concentration of salts to precipitate it, and a larger percentage of it has progressed so far in this degradation, that it is not precipitated by salts, nor can it be coagulated by heat. Therefore, the distribution of the proteid in the less colloidal state merely indicates that the biological processes of tumors are somewhat different from those of normal tissues.

To differentiate sharply between the essential characters of two proteids, a different means must be employed. By ultimate analysis or by precipitation behavior, we would not be able to differentiate between the serum globulin from two different species of closely related animals.

Two methods are available to distinguish between closely related proteids. We may use the biochemical method involved in the precipitin test, or we may completely disintegrate the proteid into its crystalline decomposition products, and separate these quantitatively into various fractions, — a method which requires a large amount of tissue, a corresponding quantity of skill and patience, — and except under very favorable conditions, the results will not be satisfactory. I have carried out a considerable number of tests by the first method, using the nucleoproteid of the tumors to develop the antiserum with which the precipitin tests have been made, and have been able to distinguish by such means between the tumor proteid and a widely different range of normal proteid, for instance, between the proteid of a lympho-sarcoma and the proteid of the liver, spleen, pancreas, thyroid, but I could not distinguish by this means between the proteid of the lympho-sarcoma and that obtained from an enlarged spleen, from a case of leukemia.

Bergell [7] and Dorpinghaus have reported the analyses of a mixture of tumors by the second method outlined above and claim to have found differences which justify them in concluding that tumor proteids have a characteristic grouping of amino-acids, the diamino-acids being much increased, and the monamino acids decreased. These results are in direct contradiction to those of Neuberg [8] and Petry,[9] as well as my own, so that no conclusions on the point of issue can be drawn.

The justification of the methods of comparison between tumors and healthy tissues is more apparent than real. A tumor is often composed almost entirely of a single kind of cell, whereas a normal organ is a composite structure, made up of a great variety of separate components which may reasonably be supposed to differ quite widely from one another. For instance, a comparison between the chemical structure of a primary carcinoma of the liver, starting in the gall ducts with normal liver tissue, is hardly justifiable. The cells lining the gall ducts are the parent cells of the mass of the tumor, and these probably have a different chemical structure from the large mass of liver cells which make up the bulk of the normal organ. It is obviously impossible to separate out that particular group of cells from a normal organ in sufficient bulk to make a quantitative chemical examination, and yet it is these cells which should be compared with the cells of the neoplasm. I am inclined to believe that the term anaplasia may apply to the chemical, as well as to the histological, structure of a malignant cell, but the work thus far reported is not satisfactory proof of such a relation.

In some instances there has been a comparison of the chemical composition of the primary growth with that of the secondary growths in some distant organ. Bang examined, with negative results, five fibro-sarcomas for a peculiar proteid, nucleo-histone, found only in lymphatic tissues. In the sixth case, he examined a growth in the inguinal lymph node, secondary from a sarcoma of the testis, extirpated about one year previously. Here he found a body having a phosphorus content of 5.18%, and the reactions of the nucleo-histone normally found in lymph glands.

Unfortunately, the primary growth was not examined chemically, but Bang [10] believes that the tissue which he used had its origin in cells directly transferred from the growth in the testis, and that chemically, therefore, the primary growth was similar to the metastatic growth in the lymph-gland. Nucleo-histone is not a normal constituent of the mammalian testes, and reasoning from these premises, Bang concludes that the primary growth had its origin in an embryonic lymphatic cell group retained in the testes. The conclusion is an argument for Cohnheim's theory.

From analyses of fourteen malignant growths, including epithelioma, sarcoma and carcinoma, after much the same method that Bang has used, I concluded [11] that primary epithelial growths do not contain a nucleo-histone, while the secondary growths found in the lymph-nodes invariably yielded nucleo-histone. I cannot agree, therefore, with Bang's conclusion. From the abundance of the nucleo-histone in the secondary growths in the lymph-glands, I was led to believe that, chemically at least, the metastases are not in all respects similar to the primary growth, and it appears as though the cells lodging in the lymph-nodes had been influenced to some extent by their environment.

Neuberg [12] has attempted to draw somewhat similar conclusions from the findings in regard to the pentose of a carcinoma of the liver, primary in the stomach. In our laboratory we [13] have analyzed a series of tumors and normal tissues for the content of pentose, and if selected instances are chosen, we may conclude that the pentose content of the secondary growths is similar to that of the primary, but our results as a whole show no consistent relation of pentose to the origin, malignancy or degeneration of the tumors. It seems to me very probable that the peculiar activity of a tumor cell is a function of its chemical structure; but the chemical studies which have been made of the proteids of tumors are quite inconclusive and show no undoubted differences from normal tissues. The analyses thus far are mere suggestions and have demonstrated only that the differences, if they do exist, are not profound ones.

Blumenthal and Wolff have reported a few experiments which have been quoted as evidence that tumors are differentiated from normal tissues by their more complete and ready digestion by trypsin as compared with pepsin. (It is interesting to note that Blumenthal now makes the claim that his experiments are the scientific basis for the trypsin treatment of tumors.) The experiments are conflicting, however, as in three cases out of five he found peptic digestion more completely digested the tumors. From our common knowledge of digestion, we should expect trypsin to digest the tumor more completely than pepsin, because the tumor proteid is largely nucleo-pro-

teid and peptic digestion necessarily leaves the large content of nuclein undissolved, while tryptic digestion readily dissolves the whole tumor tissue. Such experiments, to be of any value, must be carried out upon isolated, purified proteids from the two sources, and not upon a heterogeneous indefinite mixture of various kinds of proteid and proteid cleavage products.

III. TOXINS IN TUMORS.

Many investigators have endeavored to demonstrate a specific toxic substance for the malignant cell, but thus far no definite toxin has been isolated and studied. I shall not refer to the numerous experiments in which toxic substances are reported in the urine of cancerous patients, because their origin, if they are present, is doubtful and the results have not been properly controlled. We have observed in the course of immunization experiments that extracts of tumors, and particularly necrotic tumors have a much greater toxic effect upon the animal inoculated than extracts of normal organs, and we have a few direct experiments which show that a much smaller amount of tumor nitrogen is required to produce a fatal result than is required from extracts similarly made from autolyzed normal organs. These results agree with some of those found in the literature, but we are not able to say what the nature of these substances is, nor can we say that they are characteristic of neoplasms. Most experiments along this line have been so improperly controlled that they are of no value.

HEMOLYTIC SUBSTANCES.

There are a number of fragmentary observations on the hemolytic effects of tumor extracts, but many of these have been clinical observations under conditions not subject to experimental control, and in other cases the hemolytic effect of the extract has been tested against erythrocytes of an alien animal species, so that their value as a possible explanation of the anemia consequent upon malignant growth is of little value. The extracts should be tried upon freshly drawn and washed corpuscles of the same animal species, from which the growth came. Such a series of experiments Dr. Weil [14] has carried out in our laboratory during the last two years, using, as a source of his material, the transplantable lymphosarcoma of dogs. Extracts have been made of these tumors in all stages of their growth, and the hemolytic effect tested upon corpuscles of animals in all conditions of nutrition, and the results have been compared with extracts made from normal organs, in some instances blood free, and in others containing blood. We have had a further control by comparing results with those obtained from extracts of necrotic normal organs; for example, the renal artery has been ligated under aseptic conditions, and the kidney allowed to fall back into the peritoneal cavity and allowed to autolyze for from ten days to three weeks, and extracts then made in a similar manner as with the tumors. From such experiments we have found that extracts of normal organs containing blood are markedly hemolytic. Extracts of blood-free organs are very slightly hemolytic, but this extract may be activated by the addition of a very small amount of hemolyzed red blood cells. Extracts of fresh, vigorously growing tumors are more hemolytic than those from most normal organs, but it is with the necrotic organs and tumors that the most active hemolytic extracts were obtained, and with these the activity is, in some instances, a hundred fold greater than with extracts from non-necrotic organs and tumors. Apparently, the necrosis and subsequent autolysis of the tissue has set free substances which are readily soluble in a normal saline solution. The blood serum inhibits the hemolytic effect of extracts from normal organs or non-necrotic tumors, but has no effect upon the powerful hemolysins in necrotic tumors. One need scarcely add that it is in cases with large necrotic tumors that we see the most profound anemia and cachexia.

During the last few weeks, we have obtained some additional evidence that the hemolytic substance in the tumor is really a factor of importance in causing this anemia. We have found that the serum of animals having comparatively large, rapidly growing tumors is hemolytic, and this hemolytic effect is most marked upon the corpuscles of normal healthy animals, and much less marked upon corpuscles of the anemic, cachectic animals in which the tumors are growing. It seems that the corpuscles in the latter case have acquired some degree of immunity to the hemolytic agent present in the serum, while the corpuscles of the normal animal have not been exposed to such an agent and are consequently much less resistant. A practical result from these studies was seen in one case where an anemic, cachectic dog with fairly large rapidly growing tumors was transfused with the blood from a strong, healthy, normal animal. Following the transfusion, there were evidences of hemolysis, and test tube experiments showed that the serum of the tumor animal taken at the time of the transfusion was markedly hemolytic for the corpuscles of eight other normal animals.

We have no experimental evidence that other cells in the body beside those of the blood are attacked by tumor extracts in the same fashion, but I am inclined to believe that the blood cells are no exception, and that other tissues suffer from this lytic action.

ENZYMES IN TUMORS.

With reference to enzymes there has been some comparative study regarding the relation of tumors to normal organs, as has been noticed above, with regard to hemolytic effect, character of proteids, toxins and inorganic salts. The first of these observations had regard to the autolytic activities of tumors. Petry,[15] Wolff and Neuberg have noted the rapidity with which tumors undergo self-digestion, and I think no one who has made any chemical study of neoplasms has failed to notice how quickly they soften and what a large

percentage of non-coagulable nitrogen may be obtained from their extracts. A large number of the usual nitrogenous decomposition products have been isolated and identified, and many strange and unfamiliar substances have occasionally been met with in so small quantities as not to permit of further study. There are some apparently authentic experiments which show that the autolysis of tumors is hastened to a much greater extent by exposure to radium and x-ray [16] than is the case with healthy tissues.

Buxton and Schaeffer [17] in our laboratory have examined a large number of malignant tumors for a wide variety of enzymes. They have found nearly all the enzymes for which they searched. However, the difference from normal tissues as obtained by their methods, which were qualitative only, do not suffice to make any conclusion possible. These results merely show that tumors are rich in enzymes, but there has been found no specific enzyme which is present in one kind of tissue and lacking in the other, which will suffice in any way to explain the tumor process. Recently, we have heard a great deal about the heterolytic enzyme which is credited with being the toxic agent in the tumor cell. Buxton's study on the enzymes in tumors showed that many tumors have proteolytic enzymes and that these enzymes will diffuse out to a sufficient extent to digest some of the surrounding proteid. However, in no case did he obtain a proteolytic action on egg albumen. The presence of the proteolytic ferment was determined by the action on milk and gelatin. Fibrin and serum were never affected. Wolff and Blumenthal [18] have, however, more recently claimed to find .marked digestive effect upon liver proteid, but this conclusion is based upon a single experiment and under conditions *in vitro* which are foreign to physiological action. There are some statements to be found in literature from other observers in regard to heterolytic enzymes, but these are of so fragmentary and irresponsible a character, and so lacking in details of the experimental method used that one cannot decide either for or against their validity. It seems to me that such an active autolytic process as we find in a tumor may very well sweep into its field of action a foreign proteid that may happen to be present, but this autolytic activity differs in degree only and not in kind from that possessed by every normal organ. A demonstration that a malignant tumor contains an enzyme capable of absorption in the body fluids, and capable of marked digestive effect upon other tissues under physiological conditions, would be a contribution of definite value, and is something we now lack. It may be that the toxic properties of tumor extracts are in large part a function of the hemolytic and heterolytic activity.

The chemist has thus far laid only a small stone in the structure of our tumor knowledge. We know more than we did five years ago, but apparently are not much nearer a solution of the chemical phases of the problem. I believe, however, that the biochemical activities of a tumor cell are quite as important matters for consideration as the histological appearance, and we shall not really appreciate what a tumor is until those activities have been explained.

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[3] Much of the work of Loeb, Howell and Matthews has been published in the above journal during the last few years.
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[14] Jour. Med. Research, vol. xvi, 1907.
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[16] Zeit. für Krebsforschung, vol. iii.
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THE "OPTOMETRIST."
A WARNING WORD.

BY JOHN C. BOSSIDY, M.A., M.D.,
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EVERY physician practicing medicine in Massachusetts has received, or will receive within a few days, a circular from the Massachusetts Optical Society entitled: "A Few Facts Pertinent to the Optometry Bill," and also a copy of the bill which it proposes to introduce in the coming legislature, together with explanatory remarks by the chairman of the society's legislative committee.

Since the physician in general may never have heard the word "Optometry" or "Optometrist," it is well to explain this in detail. The optometrist, so called, is an optician. The word is but three years old, officially, and its history is as follows:

It took much time and thought to settle on this word, inasmuch as its sponsors discussed "Optist," "Opticist," "Ocular Refractionist," "Neurologist," "Neurometrist," and "Optometrist" as their would-be title.

The opticians, after forming state societies, organized a National Association of Opticians a few years ago, such association revolving in great part around a wholesale optical house in Boston. In 1903 and 1904, Mr. Eberhart, of Dayton, Ohio, was president of such National Association. In the *Optical Journal* under date of November, 1903, page 658, we find this advertisement:

> "This is a cut of the word 'Optometrist' furnished us by Mr. Eberhart, President of the American Association of Opticians, and supplied by us to any optician, postage prepaid, to any address, on receipt of thirty-five cents. We have already sold quite a large number, which is a pretty good indication that this word, coined by Mr. Eberhart, is a popular one and likely to be adopted by the American Association at its Milwaukee Convention in 1904."

Later, in the same journal, we find an advertisement reducing the price of the cut "Optometrist" to the significant sum of thirty cents. This, an official advertisement, proves absolutely that any optician could, or can, become an Optometrist by buying a sign and paying thirty cents therefor.

In the *Optical Journal* of Aug. 4, 1904, the same Mr. Eberhart, as president of the National

Association of Opticians, in his address of welcome at their annual meeting in Milwaukee, defined "Optometry" as "The Science which Treats of the Physiology of the Functions of Vision and the Physical Effects thereon by Lenses." Such word was, I understand, finally adopted as the title of the optician.

In the same address, the gentleman used the identical arguments from firstly to sixthly, which are found at the head of the circular being mailed this week to our Massachusetts physicians.

These arguments, then, are not original with our Massachusetts opticians, nor are they original with Mr. Eberhart, as he gives credit to a Mr. Prentice, of New York, for them, and they therefore contain the composite or combined wisdom and literary ability of many opticians.

Now, then, since any optician can call himself an "Optometrist," and (if their bill should go into effect) could be legally recognized as such, it is well for the physician in general to understand that the bill makes no difference with the standing of the optician except this:

The traveling vender of glasses, who now sells them in the country districts and disappears, would then have a certificate containing his name and number, and would be obliged, on the consummation of a sale, to give a receipt of sale to the customer containing his name, postoffice address and certificate number. He would not know any more then than he did when unknown, nor would any of the men registered and continuing in one place of business be any wiser than before the issuance of their certificate.

Every one who for two years preceding the passage of this bill had been in the optical business in the slightest refractive way could be registered without examination; even the boys who grind lenses at a wholesale establishment and who are members of the Massachusetts Optical Association could be registered and become a thirty-cent professional man, provided after working hours they (as they frequently do) fitted glasses at their home or the homes of any customers whom they could secure. I am, when I say this, not forgetful of the reading of section 5, of their bill:

> "Upon submitting to said board satisfactory proof as to his character, competency and qualifications, to receive from said board a certificate of registration."

That reads well; means little. Try to legislate a man out of business and you must provide for a law annex and a court of appeals.

Within a radius of a hundred yards in Boston, we find one man whose picture and advertisement proclaim him the greatest eye-sight specialist of the present day; while across the street is a man teaching what he calls the greatest system of eye and nerve measurements in existence, and formerly furnishing his students with a diploma and degree of Doctor of Optometry for $10.00. Not a stone's throw away is a third, whose picture and advertisements, scattered broadcast through the mail, proclaim him the one man in America who can absolutely correctly measure the eyes. Across the street, we find another optician working under the system of the celebrated Dr. "Blank," whose diploma, granted under the laws of Kansas, would make you an Opt.D. And finally, we note within this same circle the man whose name appears appended to the circular so recently sent to all medical practitioners in Massachusetts, and who modestly signs himself, "Chairman of the Legislative Committee." He neglects to mention his greatest title, or highest honor, for he is now the president of the National Association of Opticians; nevertheless, he is working under no general system, but under another celebrated "Blank" system.

He has written recently a paper entitled: "Massachusetts needs an Optometry Law," and your writer will later pay especial attention to this same book. In this connection, I cannot forego quoting from the remarks of this young gentleman, Mr. Palmer, at the tenth annual meeting of the New England Association of Opticians, held at Boston, May 17, 1904:

> "The best men," he said, "make a charge for their skill, and this is as it should be." He stated emphatically: "We can refract better than the oculist, and if we consider the total cost of an oculist's services and the charge of the dispensing optician for putting up the prescription, we can do work *not only better* than they, but **cheaper.**" If this is true, why not come out in the open?

Another remark of this same gentleman in his monograph, is worthy of quotation:

> "The oculist's or (more strictly) the ophthalmic surgeon's sphere of work is the treatment of diseased eyes and the performance of operations when necessary."

The inference is that the physician is incompetent, and should not be allowed to refractively examine the eyes of patients. In fact, the opticians have gone on in their claims until they not only pretend and advertise to know more than the oculist, but to define and limit the oculist's sphere of work.

They once possessed in Massachusetts an Optical College, which was incorporated under the laws of the state in 1899, with no opposition from the medical fraternity. Two years later, they petitioned the legislature for permission to grant degrees, such degrees to read "Bachelor of Optics" and "Bachelor of Physiological Optics." Such legislation was refused, and the College died soon afterwards.

Coupled with it, before the Committee on Education, was a bill to allow a Springfield school to grant the degree of "Doctor of Pedagogy." Such legislation was refused, and within a year the school moved to the neighboring state of Connecticut.

It would therefore seem that the life of these colleges depended on state aid in the sense that when hey could not get authority to grant degrees, they had no object for existence. The reasons for the passage of their bill are adroitly worded and put to catch the unwary. They can be easily answered, and such answer will be forthcoming at the proper time.

The gist of their argument to medical practi-

tioners is this: "Many people in the country, some in the city, are fleeced by the traveling or incompetent vendor of glasses. Would it not be better, where no oculist is at hand, to have an optometrist, of whose ability you would be certain, do the examination?"

Naturally the physician may say, "yes," and perhaps will sign their petition for legislation to recognize so-called Optometry.

This happened in New York to the extent that more than seven hundred physicians were said to be actively interested in the passage of a bill, establishing the optical trade as a medical specialty, and granting state registration to these gentlemen for the practice of their "profession."

They gave us a similar experience in 1901, in this state, when they petitioned for degrees. A copy of their petition showed the names of many doctors in regular standing in the Massachusetts and Homeopathic Societies, and one of them a vice-president of the Massachusetts Medical Society. They had been reached and their signatures had been secured by some specious argument, as for example: "We desire to become better educated; we seek to elevate the standing of our business or profession. To that end, we wish a college where mathematics, optics, physics and allied subjects, pertaining to the science of light and lenses, would be taught."

The physician naturally applauded such honest endeavor, and as a result loaned his name, but later sorrowfully avowed that he had mistakenly given his approval to an unworthy cause. It is to be hoped that such will not be the result of the present circular. Physicians should withhold their signature and approval until they have seen, read or weighed both sides of the matter.

In this connection, please again read your circular signed by Mr. Palmer; then read the following, sent to his fellow opticians:

BOSTON, Dec. 16, 1907.

Dear Sir: As you know, the Massachusetts Optical Society will present the enclosed optometry bill to the incoming legislature. The importance of this action is very apparent to any one who has kept in touch with the drift of the *controversy between the opticians or optometrists and the oculists.*

We are sorry to find you are not a member of the society, and most earnestly urge you to join. We do not believe you will want to have this bill passed without having helped to bring it about. *Now is the time to get on to the band wagon. Don't delay.* Fill out and return the enclosed application blank *at once.*

Your legislative committee is not only giving freely of their money but also taking many hours from their business to devote to this work. We believe every optician and optometrist in the Commonwealth should give something, even though it is a small amount, to help defray the campaign expenses. Our printing bills, stenographers' bills, stamp bills, etc., are very large and we must *have your financial help.* Don't put this letter aside until you have sent as much as you can spare to the treasurer. . . .

We have sent a letter and considerable printing matter to the editor of every newspaper in Massachusetts. Let us urge *you* to make a personal call upon *your editors at once,* asking them to give our letter and enclosures most careful consideration and impress upon them the importance of this legislation. We have also sent a letter and the bill to every physician in Massachusetts. *Go at once* to all the physicians in your section, asking them to sign the postal we enclosed in their letters. See all the members of the legislature in your section *at once.* Give them a copy of the bill and all other information as outlined in the booklet you received some weeks ago.

Send the committee the names of all legislators with whom you have any influence. You can have all the printed matter you want by sending word to the committee. Please enclose stamps, for our stamp expense is very large. If *you* do as we have requested, the success of the bill is assured. *Do your share at once.* . . .

Emphasize these points. *Do it now. Get busy along this line. Don't forget your contribution.*

Yours very truly,

BRIGGS S. PALMER,
Chairman Legislative Committee.

He starts with a misstatement, — there is no controversy between oculist and optician. The bill aims at the heart of every medical man in Massachusetts, in proof of which I can state, and do say so now, that the Boston Homeopathic and Massachusetts medical societies (through their respective legislative committees) have unanimously voted to oppose, in every honorable way, the passage of this bill. Gentlemen, think twice before you act; do not permit your editors and legislators to be misled; ask them to suspend judgment.

In conclusion, let me say that the passage of this law means this, — no more, no less:

The dignifying of their trade; the cheapening of our profession and the letting down of the bars which guard the practitioner and the public.

STRAIN AS A CAUSATIVE FACTOR IN INFECTIOUS ARTHRITIS.

BY JOHN D. ADAMS, M.D., BOSTON.

INFECTIOUS arthritis, so-called for want of a better term, presents in its many manifestations one of the most perplexing and important problems in orthopedic surgery.

We find this disease in one form or another in a large percentage of our clinic cases. In this working class of people it usually means that the patient is more or less incapacitated for work, and our treatment becomes a vital issue to a bread winner.

Experience has shown the hands to be a common seat of the trouble, and in a large majority of cases the primary manifestation, and the object of this paper is to report the observations on six cases all occurring in patients with the same occupation, with an attempt to discover a common factor as to cause. The histories of three of these cases are sufficient to illustrate all the points in question. They do not present anything very unusual except as to certain common factors.

CASE I. Dressmaker, fifty years old. Has been pursuing present work for ten years. Three years ago began to have pain in the terminal phalangeal joints of right hand, especially in middle finger, on which she wears thimble. Pain has been intermittent in character but has grown progressively worse, inconveniencing her materially in her work. In the last year the pain and swelling have spread to the metacarpo-phalangeal joints, the trouble having appeared in the other hand also. She has gradually lost motion

in many of the joints and has become totally incapacitated for work, owing to excruciating pain. The ordinary routine treatment has been without effect.

Examination shows very much deformed hands, right worse than left. All of the middle phalangeal



X-ray of right hand of Case 1, following operation (Keene).

joints distinctly dislocated and many of the terminal phalangeal joints turned at right angles; joints practically immovable from the point of usefulness. No involvement of wrist or any other joint.

CASE II. Dressmaker, forty-five years old. Has been pursuing present work for five years. One year ago began to have pain in the phalangeal joints of right hand, especially on thimble finger. This trouble has spread rather rapidly to all the joints of the right hand. Six months ago began to have trouble in left hand. Except for certain muscular pains has had no other symptoms. Joints of hand have become progressively worse, suffering pain and having exquisite tenderness when joints are touched or moved. Patient has become practically incapacitated for work.

Examination shows a uniform, fusiform swelling of all phalangeal joints. Subacute inflammation, very tender to touch and capable of very little motion. No fluid present but distinct thickening around joints.

CASE III. Dressmaker, forty years old. Has been pursuing present occupation for ten years. For past three years has had intermittent pain and more or less trouble in hands. Does not remember in which hand the trouble began, but it has been entirely confined to the phalangeal joints. Has been free from trouble for periods of six months at a time and has not noticed any great amount of swelling. For past two months has had acute pains in phalangeal joints of both hands, markedly increased on attempting to use them.

Examination shows slight swelling of phalangeal joints of both hands. Motion possible but rather painful. No fluid. Some thickening.

X-ray of these cases shows a hypertrophic condition in the affected joints, as evidenced by thickened periosteum. No destruction of joint or other pathological condition.

The other three cases present practically the same history in different stages of severity, but it occurred to the writer that these three cases illustrated the three different stages and character of onset sufficiently to appreciate the points of interest.

Analysis of these cases will show many common factors, namely, vocation, seat of disease, sequence of joints attacked, symptoms and relief to treatment.

In considering vocation as a factor one must not only analyze the character of the work but also the conditions under which it is done. Careful investigation showed that all these dressmakers worked in dry, well ventilated rooms, not exposed to drafts and in an even temperature. Their work, ten hours a day, was chiefly on very heavy goods, mostly men's clothes. Case I, which showed the most advanced stage, had been handling very heavy cloth, chiefly overcoating and riding breeches.

It will also be noted that the symptoms were first noted in the thimble finger, and the histories show a progressive infection of the joints in right hand before any symptoms occurred in the left. The onset was more or less insidious and symptoms not especially acute, but in all the cases, intensified greatly with use.

The pain, intermittent in character, was more in the nature of a soreness rather than the throbbing pain of an infection. The symptoms were not affected to any extent by sudden changes of temperature. In all the cases there was absolutely no indication of any trouble in any other joint in the body. In other words, the trouble was absolutely confined to the hands. The problem confronting one in these cases is, to say the least, a serious one, as we have a patient otherwise perfectly well but incapacitated for making her daily bread. Such a condition of affairs brings about the most pronounced type of mental depression.

The following line of treatment was pursued in all the cases: Urinary examination showed a marked hyperacidity in all the cases.

General treatment. — Diet: Omit all meats. Forced liquids.

Sodium benzoate, gr. v, t. i. d., to neutralize acidity.

Local treatment. — Baking daily.

This was done entirely by electricity. In the more acute cases a very intense heat was used, namely, a 100 candle-power light, applied for a period of twenty minutes, close enough to be tolerated by patient over bare skin.

In other cases, a small wooden box, one foot square, was made with two small apertures, large enough to insert hands, in one end. The box was lined with asbestos to prevent radiation, and fitted up with six 16 candle-power incandescent

lights. A temperature of 300° was maintained here for a period of twenty minutes.

The results were most gratifying. The counter-irritation of the heat produced the usual hyperemia to a marked degree, and all the cases showed a gradual diminution of pain, with a return on failure in systematic baking. The cases pursuing the treatment conscientiously for two months had entire relief from pain, with ability to return to work.

Case I was operated upon following her treatment, owing to the fact that she was unable to hold her needle on account of her extreme deformity caused by complete dislocation of all her metacarpo-phalangeal joints.

Under ether the adhesions were entirely broken up and dislocations reduced. The head of the third metatarsal bone on the right hand was removed; on the left hand it was partially removed leaving enough joint surface to make some motion possible. The hands were put up in plaster for ten days when manipulation was begun. One year after operation the deformity has not recurred to any extent, and she has some considerable motion in joints. The patient has had absolutely no pain for six months — in the absence of any baking — and is able to pursue her work.

Now, whatever the cause in this class of cases, whether of chemical or bacteriological origin, the writer feels justified in considering strain as a causative factor. It will be noted that in four of the cases the symptoms started in the thimble finger, that all of the cases worked with very heavy goods and that the trouble in all of the cases was confined to the hands.

There is nothing new offered here in the line of treatment, but the writer believes that with consistent baking and diet the pain in these cases may be controlled, and that in cases of extreme deformity operation is to be favorably considered.

Clinical Department.

PSEUDO-TUBERCULOSIS OF THE PERITONEUM. REPORT OF A CASE.

BY FARRAR COBB, M.D., BOSTON,
Assistant Visiting Surgeon to the Massachusetts General Hospital.

If, during an abdominal operation, miliary tubercles are found studding the peritoneum to a greater or lesser extent, it does not follow that the disease is true tuberculosis of the peritoneum. While the majority of cases presenting such an appearance will prove to be tuberculosis, in a certain small percentage, especially where there is little or no fluid, the case will turn out to be one of pseudo-tuberculosis caused by foreign bodies.

I report the following case of my own, not only because of its pathological interest, but also to emphasize the fact that in the absence of ascites, intestinal adhesions and enlarged mesenteric glands, the presence of tubercles on the peritoneum should not lead to a positive diagnosis of a serious disease, or to a gloomy prognosis, without thorough exploration of the abdomen and a careful microscopic study of the nodules.

B. G., married, twenty-eight years old, entered the West Surgical Service of the Massachusetts General Hospital, Dec. 20, 1900. She was placed in my care by Dr. Beach, the senior surgeon of the service. She had been recommended from the Out-Patient Department, because of a lacerated cervix and perineum.

Family history, unimportant.

Previous history: She had been well until the birth of her child, eighteen months before. Catamenia had been regular and not painful. She had always been constipated. No history of gastric or intestinal indigestion could be obtained, or anything suggestive of a previous gastric or duodenal ulcer, of typhoid fever or appendicitis. Since the birth of her child she had had severe dysmenorrhea with constant pain in the lumbar region shooting down into the right sciatic nerve. She had not been able to walk the last few weeks because of this pain and because of a bearing-down feeling. She had had cutting pain in the rectum and across the lower part of the abdomen, especially when at stool. There had been no headache, no vomiting and no bladder symptoms.

Physical examination: A well developed and nourished woman. Heart and lungs normal. Vaginal examination showed a torn perineum with marked cystocele and rectocele with a decided sagging of the pelvic floor and prolapse of the uterus, which was of normal size. There was a bilateral tear of the cervix. There was some tenderness on pressure in both broad ligaments with a slight induration in the right. The right ovary was enlarged and tender and entirely prolapsed behind the uterus. Rectal examination discovered a few moderate sized internal hemorrhoids. Both the temperature and pulse were normal during her stay in the ward previous to operation.

She was operated upon by me on the 26th of December, 1900. The usual plastic operations for the cure of the cystocele and rectocele and repair of the cervix and perineum were done, after which, with the patient in the Trendelenberg position, the abdomen was opened in the median line by a two and one-half inch incision. The abdominal operation was undertaken for the purpose of suspending the prolapsed uterus and correcting the displacement of the ovary. After making the incision it was seen that the surface of the peritoneum everywhere, and especially in the pelvic region, most marked on the surface of the uterus, tubes and ovaries, was studded with small miliary tubercles presenting a typical picture of tubercular peritonitis. There was no free fluid in the abdominal cavity, no intestinal adhesions and no enlarged or palpable mesenteric glands. The appendix was small and normal. The stomach and duodenum were not examined, unfortunately, for signs of old perforating ulcer. Because of the possibility of what was thought to be a tubercular peritonitis arising from disease of the Fallopian tubes, both tubes and ovaries were tied off and removed. The uterus was suspended and the abdominal wall was closed in layers with chromicized catgut. Three pints of normal salt solution were left in the abdominal cavity. The foot of the bed was elevated for reversed postural drainage.

There was no reaction from the operation either in the pulse or temperature. Convalescence was uneventful. The peritoneal and abdominal wounds

healed by first intention and the patient left the hospital, Jan. 20, in good condition.

The pathological examination of the tubes and ovaries removed discovered the fact that this was not a case of tuberculosis, but that the tubercles were due to the irritation of true foreign bodies. A determined investigation was made to discover some history of antecedent acute abdominal disease, which might be interpreted as a visceral perforation, but without success.

The pathological report on the case was made by Dr. Wright, the director of the pathological laboratory, and was as follows:

"In chronic inflammatory tissue on the ovary and Fallopian tube are some peculiar circular nodules, about the size of a miliary tubercle. These are composed of epithelioid cells and in some instances also of giant cells, the margins of which — the tubercles — are encapsulated with dense connective tissue. In the interior of some of these nodules are foreign bodies suggestive of the remains of vegetable material. These circular nodules are not true tubercles of tuberculosis, but are typical foreign body tubercles."

Numerous sections of the specimens were made by myself and studied with various staining media and reagents with a view to determining the nature of the foreign bodies. These in every case showed bright opalescent green with a high refractive index under all



FIG. I. Nodule on surface of the right ovary, under low power. Note giant cell close to foreign body, also ring of connective tissue.

staining methods and presented a marked striated appearance, suggestive of the teeth of a comb or not unlike the ribs of certain vegetable fiber. The figures annexed to this article show fairly well the histologic

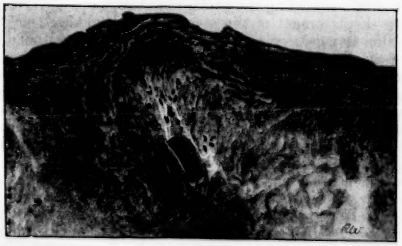


FIG. II. Foreign body and immediate neighborhood under high power. Note the striated appearance.

nature of the tubercles, the dense ring of connective tissue, the numerous epithelioid cells and occasional giant cell, with the green, highly refractive body in the centre.

The woman remained well with no sign of abdominal disease for three years after her operation, when she was last seen by me. Further attempts to follow up the case have been unsuccessful.

There are several varieties of pseudo-tuberculosis which are of interest chiefly to the physician. If these forms involve the peritoneum the tubercles found are always in association with disease of other organs, especially of the lungs. The chief causes of these complex forms of pseudo-tuberculosis may be summed up as bacilli different from tubercle bacilli and various mold fungi. Foreign body tuberculosis of the peritoneum is of special interest to the surgeon. It can exist independent of organic disease elsewhere. It may be caused by the irritation of true foreign bodies reaching the peritoneum through visceral perforation or by particles from ruptured intra-abdominal cysts, hydatid or dermoid. A number of cases have been reported in which pseudo-tuberculosis of the peritoneum has been caused by the hooklets from ruptured hydatid cysts or by small pieces of cyst membrane. Dévé, in a clear description of the appearance of the tubercles in this form, says they resemble true miliary tubercles to the closest microscopic detail. He refers to a case reported by Lehne who noted a similar pseudo-tuberculosis of the meninges caused by the rupture of a hydatid cyst of the spinal column.

Meyer has reported a case in which minute cholesterin crystals from a ruptured dermoid ovarian cyst were the irritating particles which caused the peritoneal tubercles. An unusual case has been reported by Helbing in which the eggs of the tenia worm were the foreign bodies found in the center of the miliary tubercles. These must have gained access to the peritoneal cavity through some defect in the wall of the intestine; Helbing suggests a perforated appendix.

A small number of cases have been reported in which the tubercles were caused by true foreign bodies. In the majority of the cases these were presumably fragments of vegetable food, as in my own case. The point of entrance of these particles of food must be through some defect in the gastro-intestinal tract, perforation of gastric or intestinal ulcers, diseased appendices or diverticula. Cases have been reported in which this form of pseudo-peritoneal tuberculosis followed a perforation of the stomach, notably the cases of gastric ulceration with perforation reported by Hanau and Cooper in which the miliary tubercles were found post-mortem, and after study were discovered to be due to fragments of vegetable food. The tubercles in both these cases were apparently similar to the case here reported, but in my case no history suggestive of gastric or intestinal perforation or even of previous digestive disturbances or of acute abdominal attacks could be obtained.

Practically it should be recognized that foreign bodies escaping from the stomach, intestines or from cysts may cause an apparent miliary tu-

bercular peritonitis, and the finding of tubercles without the accompanying signs of tuberculosis, enlarged mesenteric glands, ascitic fluid and intestinal adhesions, should lead to a thorough search of the abdomen, to the excision of one or more of the tubercles for microscopic examination, and to careful investigation as to previous digestive disturbances.

Reports of Societies.

INTERNATIONAL DERMATOLOGICAL CONGRESS.

SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS, HELD AT THE ACADEMY OF MEDICINE, NEW YORK, SEPT. 9 TO 14, 1907.

THIRD DAY, WEDNESDAY, SEPTEMBER 11.

(Continued from No. 25, p. 831.)

THE first two hours of the session were devoted to the exhibition of patients and formal discussion on the same.

DR. VEIEL, of Cannstatt, Württemberg, and DR. H. HALLOPEAU, of Paris, France, in the Chair.

BLASTOMYCOSIS OF THE SKIN,

by DR. M. OPPENHEIM, of Vienna, Austria. The author stated that the first case in Europe conforming with the American cases of this disease (pseudolupus) was observed in Neumann's clinic in Vienna, by the writer, in 1904. Later he had occasion to observe three others. The clinical picture in the earliest stage was a light, red-stained, swollen lesion, with characteristic pustules. From the latter, superficial ulcers with irregular margins arose, which produced superficial scarring. Histologically, there were intra- and subcorneal and intra-epithelial abscesses; the rete pegs were increased in size and the stratum papillare was infiltrated by round cells. In the abscesses and infiltration were found the blastomycetes, singly and grouped, but never abundantly. As the lesions grew older, the picture was similar to lupus verrucosis, with elevations surrounding cicatrized areas, thickening of the nose and lip, excoriations and deep ulcerations with irregular margins and uneven base covered by thick crusts, sometimes destroying the nostrils and perforating the septum of the nose. From the base of some of the ulcers papillary excrescences soon overgrew the margins and showed points of cornification. Microscopically, there was an overgrowth of epidermis and an infiltration of the corium with round, plasma and giant cells, even to the subcutis. A few blastomycetes were present. The therapeutic effect of potassium iodide was evident in all four cases.

SYSTEMIC BLASTOMYCOSIS. A CRITICAL SURVEY AND SUMMARY OF NINETEEN CASES (FOUR OF THEM UNPUBLISHED).

DR. FRANK H. MONTGOMERY and DR. OLIVER S. ORMSBY, of Chicago, in this paper stated that about one hundred cases of blastomycosis involving the skin had been recognized, chiefly in Chicago and vicinity, but also in other parts of the United States, in Canada, in various parts of Europe, in Japan, India and South America. Of the 19 cases recorded in this paper, 12 were dead, 4 were dying, 2 had recovered, and 1 had disappeared from observation. All of the cases, with possibly one exception, presented multiple subcutaneous abscesses and nodes, usually indolent in type. With the appearance of the abscesses there had been in all cases a disturbance of the general health. The duration of the disease varied from a few months to two and a half years. Blastomycotic lesions had been demonstrated in practically all of the tissues and organs of the body. The characteristic changes consisted in the presence of nodules or abscesses in the soft tissues, and caries in the bones. The abscesses varied greatly in size. Necrotic areas in bones, containing the organism in abundance, surrounded by leucocytes, giant cells and other cells peculiar to the granulomata had been noted and fully described in one case. It was worthy of note that, notwithstanding the presence of extensive suppuration in most of the cases, in two only was amyloid degeneration recognized, and in only one were these changes at all extensive, occurring in the liver, kidneys, adrenals, spleen, the colon and in various lymph glands. The bacteriology of systemic blastomycosis was identical with that of the cutaneous form of the disease.

DR. JOSEPH ZEISLER, of Chicago, said he had seen many of the cases of blastomycosis reported by Drs. Hyde, Montgomery and Ormsby, and in order to illustrate the difficulties ofttimes connected with this subject, he referred to the case of a young woman, about twenty, who fell ill with a high fever, which pointed to a pulmonary infection of some kind. For many days a miliary tuberculosis was suspected, but no definite diagnosis was made. Finally, sufficient sputum was secured and submitted to Dr. Hektoen, who upon microscopic examination found the blastomycetes present.

DR. THOMAS C. GILCHRIST, of Baltimore, spoke of the similarity between the organism of blastomycosis and that of granuloma coccidioides.

DR. JAMES NEVINS HYDE, of Chicago, expressed the conviction that the organism which produced blastomycosis was more or less limited to a certain geographical distribution, and, for reasons he could not explain, that particular area was not very far distant from Chicago and Indiana. It was there that the organism seemed to flourish as it did nowhere else.

DR. HOWARD MORROW, of San Francisco, said he had had repeated opportunity to compare cultures of blastomycetes with those of the granuloma coccidioides, and he had found that they varied considerably.

DR. DOUGLASS W. MONTGOMERY, of San Francisco, said there was no doubt that there was a marked difference between the two fungi under discussion. Dr. Morrow had grown both of these organisms on the same media, and under the same conditions. One showed a halo; the other a clump of fungus. He had had no trouble in cultivating the Illinois micro-organism in California.

DR. OLIVER S. ORMSBY, of Chicago, said that blastomycosis was really a very serious disease, and one that did not belong entirely to the dermatologist. It was important, he thought, that this fact should be recognized. In the cases they had seen in Chicago, the skin had been involved in practically all but one instance.

THE THYROID AS A FACTOR IN URTICARIA CHRONICA.

DR. M. L. RAVITCH, of Louisville, Ky., claimed that chronic urticaria should be classified as a curable disease, and in connection with its treatment he made a plea for a more thorough study of thyro-therapy. He firmly believed that in many cases of chronic urticaria, thyroid extract was a specific. He claimed that disorders of the thyroid gland were the cause of many toxemic conditions, and that thyroid extract was an autotoxin; hence its usefulness in toxemic conditions,

urticaria chronica included. Chronic urticaria was more frequently among women than men, and the fact that functional thyroid disorders were also more common in women led the writer to believe that functional disorders of the thyroid were the cause of chronic urticaria. He regretted that thyro-therapy had been neglected in the treatment of skin diseases, and pointed to the fact that remedies useful in chronic urticaria were also useful in functional disorders of the thyroid gland. Outside of the eruption, the writer claimed, the symptoms of chronic urticaria were almost the same as in thryoid toxemia.

HYDROA PUERORUM (UNNA),

by DR. MARCUS HAASE, of Memphis, Tenn., and DR. ROSE HIRSCHLER, of Philadelphia.

After reviewing the recent literature on this subject, the authors reported in detail a case of hydroa puerorum seen with Dr. Unna, in his clinic at Hamburg, from which a biopsy was made. The histopathological findings in the case were also detailed, and an attempt was made to establish its proper place among the hydroas. In claiming for this disease a place in the nomenclature as a dermatological entity, the authors offered the following conclusions: (1) It was an acute erythemato-vesicular disease, preceded and accompanied by intense burning and itching. (2) The vesicles coalesced to form bullæ. (3) Involution of lesions without pitting or scarring. (4) The first attack occurred in the first year of life. (5) Recurrence of attacks independent of external influences. (6) Gradual lessening of attacks in extent, intensity and duration. (7) Spontaneous disappearance at puberty. (8) Unrestricted to any particular lesion. (9) Restricted to male sex. (10) Relatively normal health during attacks. (11) To these might be added the superficial character of the disease, the lesions being confined to the rete.

DERMATITIS COCCIDIOIDES; WITH REPORT OF A CASE,

by DR. A. RAVOGLI, of Cincinnati, Ohio. The case was reported under the nomenclature of dermatitis coccidioides because the parasite found in the lesions closely resembled a coccidium. The clinical features of the disease, although related to blastomycetic dermatitis, were somewhat different. The parasite taken directly from the ulcerated surfaces had a long thread of mycelium, but when cultivated on glycerin agar and on blood serum showed only round bodies, with scarcely any mycelium. Its growth was rapid and abundant and its development seemed to be due to endogenous proliferation. The result of the treatment was also different from that obtained in true blastomycosis.

DR. DOUGLASS W. MONTGOMERY, of San Francisco, said he could not make out the coccidioides in the sections shown by Dr. Ravogli.

At the conclusion of this session, Prof. Thomas De Anicis of Naples, Italy, was elected president of the next congress,which is to be held in Rome in 1910.

FOURTH DAY, THURSDAY, SEPTEMBER 12.

The first two hours of the session were devoted to the exhibition of patients and formal discussion on the same.

PROF. E. GAUCHER, of Paris, and DR. ANDREW R. ROBINSON, of New York, Vice-Presidents, in the Chair.

FURTHER EXPERIENCE WITH THE WHITE LIGHT AND BLUE LIGHT OF THE QUARTZ LAMP, WITH DEMONSTRATIONS,

by PROF. E. KROMAYER, of Berlin, Germany. (This paper was read by title.)

THE SPECIFIC ACTION OF RADIUM AS A UNIQUE FORCE IN THERAPEUTICS.

DR. ROBERT ABBE, of New York, said that radium ranked, not with caustics, cautery, antiseptics or medication, but with specifics. This did not mean a "specific" for cancer in the popular sense, but for erratic cell growths constituting some types of tumor tissue in the earlier stage of invasion or of moderate development. Details of the method of using it had not yet been fully worked out. The dosage, so to speak, or the time of exposure necessary for curative action, was as yet empirical. Some apparent cures of small epitheliomata or sarcomata had already endured more than three years. A photographic plate provided a good test to show the working force of an unknown specimen, in comparison with one of standard strength. It was not entirely a mysterious force; in part, at least, it was an electric discharge, essentially of negative elements. Hence, so far as it was possible to say, it suggested a theory of its action in that it might supply an element of electric force vital to normal and orderly growth, the loss of which might have caused a disorderly cell growth, which in the aggregate constituted tumor masses. It was supplementary to Roentgen rays and in some cases was efficient when the rays failed. The over-action of strong radium was destructive and vitiated the benefit of moderate use. The best results had followed one hour's exhibition of the working unit (10 mg. RBr) on small growths, and three to four hours on larger ones, with an interval of one month for study of the effect. Ischemia of the parts during treatment greatly enhanced its action. Pigmented moles, melanotic growths, and giant celled sarcoma, like epitheliomata of the eyelids, face and body, were particularly susceptible to its curative action as a specific agent. Its value in nevoid and angiomatous tumors was due to its irritant action, producing obliterating endarteritis and fibroid changes.

DR. JAY F. SCHAMBERG, of Philadelphia, said that unless it could be shown that radium was more efficient than the x-ray, there would be no advantage in preferring it to the latter agent. The advantages of radium lay in the simplicity of its application, and the fact that it could be used in inaccessible cavities, where the x-ray could not be applied.

DR. H. RADCLIFFE-CROCKER, of London, gave some experience with radium emanations obtained from a solution of radium.

DR. HERMAN LAWRENCE, of Melbourne, Australia, said that in cases of rodent ulcer of the eyelid he regarded radium as the best method of treatment. Combined with the x-ray, it was also of great value in keratosis senilis. In seborrheal eczema of the eyebrow, where one could not well use the x-ray, radium had proved very efficacious and without destroying the hair.

THE THERAPEUTIC EFFECT OF RADIUM IN DERMATOLOGY,

by DR. L. WICKHAM, of Paris, France. (Read by title.)

THE EFFECT OF ROENTGEN RAYS ON PAGET'S DISEASE OF THE BREAST,

by DR. TERZAGLII and PROF. R. CAMPANA, of Rome, Italy. The authors stated that some forms of psoric eczema of the breast and nipple frequently were neglected and at times seemed a chronic and malignant form, as of epithelial tumor, a form which had been named from the author first describing it as "Paget's disease." The authors then reported in detail the history of a case that threatened to assume the above form of disease, in which the affected tissues apparently resumed their normal condition under the appli-

cation of the Roentgen rays. The method was repeated in another case, with the same favorable results. These two experiments, Professor Campana said, did not seem to him to be without interest when we reflected on the extremely malignant course of Paget's disease.

PROGRESS IN RADIOTHERAPEUTICS,

by Dr. H. Strebel, of Munich, Germany. (Read by title.)

X-RAY BATHS AND DERMAMETROPATHISM.

Dr. Herman Lawrence, of Melbourne, Australia, described the x-ray bath as one in which the x-ray was applied to the skin of the entire body at one time, and he told in detail its method of application. The speaker said he had treated some 500 cases of skin disease by radiotherapy, and he believed that he secured better results by the method of giving several mild exposures as compared with the method of giving a heavy dose and then waiting to see the result on the patient's skin. He had used the bath successfully in mycosis fungoides, generalized eczema, psoriasis, obstinate urticaria and pruritus; also in children in very troublesome cases of lichen urticatus. Dermametropathism was a word he had coined; it was meant to express a system of measuring a disease of the skin, and was based upon the result produced upon the skin by pressure with a smooth instrument, such as a pen handle. The author contended that by this method of clinical observation, which he called "skin marking," certain markings indicated the chronicity of certain diseases, and in some cases in adults the near onset of a relapse; also, that it explained the exaggeration of symptoms in some cases.

A REPORT OF THE RESULTS IN A SERIES OF EPITHELIOMATA TREATED WITH X-RAYS MORE THAN THREE YEARS AGO.

Dr. William Allen Pusey, of Chicago, read this paper, of which the following is a summary: Of the 31 cases which were classed as not entirely successful, 28 had failed of relief under other forms of treatment; only 3 were primary cases. These 3 were included in the group of failures, and they were all carcinomata involving the orbit. They were inoperable and occurred in patients who had abandoned treatment before any result might have been expected. In this entire list of 29 unsuccessful cases, there were only 5 in which, in the author's opinion, there was any hope of cure by other methods of treatment. All of these 5 cases had previously been treated surgically, and all had been referred to him by surgeons. One case in the practically successful group was an epithelioma involving the external auditory canal. The other 4 cases were among the failures; in 3 of these there had been good grounds for expecting successful results from operation, but the patients would neither submit to operation nor complete their x-ray treatment. Among the entire list of 111 cases treated, there were only 3 failures, in which there was any reasonable hope of success. Twenty-eight of the 111 cases were either hopeless or most unpromising, so far as any other method of treatment was concerned; of the 83 remaining cases, 80 were successful. Counting 31 cases as failures, there were 80 successful cases in a list of 111 successive cases of epithelioma treated more than three years ago, a showing of 72.5% of successful results in 111 unselected cases.

REPORT OF 800 DERMATOLOGICAL CASES WITH X-RAY AND HIGH FREQUENCY CURRENTS AT THE MOUNT SINAI HOSPITAL. (DR. LUSTGARTEN'S CLINIC.)

By Dr. Samuel Stern, of New York. The author stated that the respective standing of radiotherapy in dermatology could only be established by continued experiments, and by collecting statistics of results accomplished. The method in which the x-ray did its work was probably by cell destruction, which led to the degeneration of the elastic and connective tissues. In epithelioma the results accomplished depended upon the proper choice of cases. The most favorable were those situated on the surface of the epidermis. The best results were achieved by a combination of x-ray and high frequency spark. In deep-seated carcinoma there was very little to be expected. It was more encouraging in the various forms of sarcoma. In acne vulgaris the results were very gratifying, while in acne rosacea there was little to be accomplished. In psoriasis the value of the x-ray was well established; also in different forms of eczema. Lichen chronicus, lichen planus and lichenoid eczema were conditions that were more stubborn, but they generally yielded to x-ray treatment. Lupus erythematosus did well with the high frequency spark treatment, but it often recurred. Lupus vulgaris affecting the mucous membranes was best treated with the x-ray, and other parts of the skin with the high frequency spark. Various types of verrucæ and nevi could be readily destroyed with the high frequency spark. In keloid, to expect permanent results, we must persist with the x-ray until a fair degree of dermatitis was produced. Folliculitis decalvans yielded well to x-ray treatment. Pruritus was benefited by both the x-ray and the high frequency current. Mycosis fungoides could be indefinitely controlled by the x-ray, but not cured. Unless the treatment was kept up, the lesions returned. In rhinoscleroma we could probably get a definite cure. In sycosis, favus and trichophytosis capitis the results accomplished with the x-ray were very satisfactory, but in the two latter conditions, other treatment was necessary. Hypertrichosis could be cured with the x-ray, but this required very careful technic. Hyperidrosis might be benefited, but only after a long series of treatments.

Dr. Neuberger, of Nuremberg, Germany, reported a case of Paget's disease of the penis, which was apparently cured under x-ray treatment. It subsequently recurred, however, and amputation finally became imperative.

Dr. M. B. Hartzell, of Philadelphia, said that while he was willing to admit that the proper treatment of epithelioma of the lower lip was excision, with removal of the contiguous glands, there were certain cases in which resort to the x-ray was entirely proper and sometimes necessary. In one case of typical epithelioma of the lower lip coming under the speaker's observation, the man refused radical treatment by the knife. After ten three-minute exposures with the x-ray the lesion disappeared, and the man had thus far remained well. He had avoided what he regarded as a very serious operation, and was now ninety-four years old.

Dr. Burnside Foster, of St. Paul, said he had seen deplorable results follow the x-ray treatment in cases of psoriasis, eczema, favus and ringworm, and they were largely due to the method in which the treatment was applied by inexperienced operators.

Dr. Francis J. Shepherd, of Montreal, said that in certain cases of epithelioma, notably in lesions about the eyelids, the x-ray was probably the best method of treatment, but when it came to lesions of the lower lip and of the muco-cutaneous surfaces, the speaker said he would strongly object to the use of the rays, especially where there was early involvement of the glands. Under those conditions, surgical treatment was strongly indicated.

Dr. William A. Pusey, of Chicago, said he was will-

ing to treat any epithelioma with the x-rays, in which a conservative surgeon did not consider it feasible or necessary to remove the contiguous glands. This at once eliminated all cases of epithelioma about the mucocutaneous junction where an operation was at all possible. It did not eliminate those in very old people, or those rare cases where an operation was not tolerated. Still, the x-ray should not be restricted to any particular field. If it was not as reliable in one case as in another, it was not worth while considering.

PROF. E. GAUCHER, of Paris, France, and DR. VEIEL, of Cannstatt, Württemberg, spoke in favor of conservatism in the use of the x-rays. The latter said he could recall many cases that were kept too long in the hands of the radiotherapists, and came too late to the surgeon.

The discussion was continued by DR. HERMAN LAWRENCE, of Melbourne, and was closed by DR. STERN.

AFTERNOON SESSION.

DR. J. NEVINS HYDE, of Chicago, PROF. ROBERT CAMPANA, of Rome, Italy, and DR. SAMUEL SHERWELL, of Brooklyn, Vice-Presidents, in the Chair.

THEME II. TROPICAL DISEASES OF THE SKIN.

THE RELATION OF THE NAVY TO THE STUDY OF TROPICAL DISEASES,

by DR. P. M. RIXEY, Surgeon-General, United States Navy, Washington, D. C. In this paper, which was read by Dr. G. E. H. Harmon, Medical Director United States Navy, Dr. Rixey made the statement that, taking a period of ten years, he had found that diseases of the skin had practically caused twice as great damage to the health of the navy as was caused by all other diseases of a quarantinable nature. When it was considered that he included such diseases as diphtheria, smallpox, scarlet fever, rötheln, etc., in this category, the basis for his statement could be appreciated. The actual proportion was as 1 to 1.8. Had he also included syphilitic affections of the skin, this disproportion would be greatly increased. Dr. Rixey said that when he was appointed surgeon-general of the navy in 1902, his first aim was to establish a school where the young officers of the medical corps of the Navy could be grounded in the essentials of medical research. Of the many tropical diseases due to animal parasites, and of the many which might hereafter be found to be of such etiology, it was his belief that for a proper appreciation of such conditions a sound working foundation in medical zoölogy was not only desirable, but essential. For honest and capable work in any branch of tropical medicine it was necessary that the worker be grounded not only in clinical observation, but he must possess a fair degree of proficiency in bacteriology, a good working knowledge of animal parasitology, and, besides, have enthusiasm for his work. The medical officers of the navy were, while in tropical waters, constantly required to study or treat such affections as ringworm, and the peculiarly virulent manifestations of syphilis. Also such diseases as yaws, leprosy, ground itch, elephantiasis, tropical ulcer and the like. The speaker also referred to gangosa, or rhino-pharyngitis mutilans, which was studied by Daniels in the Fiji Islands, and was unfortunately very prevalent in the island of Guam. Those who had studied it most carefully were positive that it was not syphilis and absolutely sure that it was not leprosy. Another puzzling affection was what was generally termed "climatic bubo." Here we had the picture of a prolonged continued fever following more or less the increase or decrease of the glandular swellings.

REPORT ON TROPICAL DISEASES OF THE SKIN,

by DR. WILLIAM DUBREUILH, of Bordeaux, France.

TROPICAL DISEASES OF THE SKIN.

DR. H. RADCLIFFE-CROCKER, of London, England, exhibited tables which showed that practically all exclusively tropical diseases of the skin were due to parasites of various kinds, and although there was still much room for further investigation, they also showed that much of our knowledge of their pathology had been worked out quite recently. Now that so many of those who were going to practice in the tropics were undergoing a course of training in modern pathological methods, we might well expect that in the near future still greater additions to our exact knowledge would be made. It was only exact knowledge which would enable us, not perhaps to treat the diseases themselves better than we did now, but, still better, to adopt the most efficient means for the prevention and spread of affections in which the disabling effects and mortality were so great. How much could be done in this direction the results of the discovery of the relation of the mosquito to filaria, malaria and yellow fever were known to all. The first of the tropical skin diseases discussed by Dr. Crocker was tropical ringworm, which he said was probably universal in all tropical countries. Among other tropical skin affections discussed by the writer was erythrasma, which was due to the microsporon minutissimum and developed in the form of patches in the groins in the axillæ; these lesions were dull red in cold weather, while in hot weather they became bright red and itching, and extended to neighboring parts. He also referred to the vitiliginous squamous dermatosis, which had been observed by Jeanselme on the coast of Annam and other parts of Indo-China; also to furunculosis orientalis and yaws, which he regarded as one of the most serious of tropical diseases on account of the severity of the lesions and of the enormous number of its victims in the countries in which it was endemic, which comprised, practically, the whole tropical zone. The main question was whether yaws and syphilis were identical or only analogous diseases. The clinical fact that the manifestations of yaws yielded to mercury and iodide of potassium, judiciously given, no doubt lent more color to the theory of identity, but it by no means proved it. He had met with one case of granuloma inguinale tropicum in a full-blooded negro, and with two cases of crawcraw from the west coast of Africa.

SOME AMERICAN PARASITES OF THE SKIN.

DR. CH. WARDELL STILES, of the United States Public Health and Marine-Hospital Service, Washington, D.C., spoke of the frequency of "ground itch" in the Southern states, in connection with uncinariasis, and gave a demonstration of preparations, showing the larval hook-worms passing through the skin. He also gave a presentation and description of specimens of a parasite new to the United States. This parasite was a branching, proliferating, bothriocephid, larval tapeworm, which occurred by hundreds in the subcutaneous connective tissue of man in Florida, and produced a swollen condition, with spots of acne-like appearance. The only similar case on record was published by Ijima (1905), of Tokyo, Japan. The American parasite was very similar to and possibly identical with the Japanese form (Sparganum proliferum). He also gave a demonstration of original specimens of Agamofilaria georgiana, a thread-worm recently described as a parasite in the skin of man in Georgia. Also, a demonstration of various stages in the life history of some of the North American ticks (particularly dermacentor), which attacked man.

THE CLINICAL GROUPINGS OF TROPICAL ULCERS OF THE PHILIPPINES, WITH SOME NEGATIVE NOTES AS TO ETIOLOGY AND TREATMENT,

by Dr. E. R. Stitt, of the United States Navy. The author stated that after observing in the natives many chronic ulcerations, which clinically did not differ from ulcerations which might be expected from badly infected and neglected wounds, or from the infective granulomata, and that from a standpoint of history there was the single common note of long duration, the conclusion was arrived at that tropical ulcer, as described by the authorities, did not exist in the Philippines. Subsequently, the same thing was observed in Guam in studying an ulcerating disease known as gangosa. Among the natives affected with leprosy and gangosa there were a certain number, called by the Spaniards the Llagosos, in whom there were frightful lesions of the lower extremity, possibly tuberculous, possibly tropical ulcer. Later on, among sailors at the Naval Hospital, Canacao, two distinct types of chronic ulcer were observed, the first conforming to Fayrer's description of Delhi boil; the second resembling Jeanselme's tropical phagedena. Smears from ulcers of the first type showed scarcely any polymorphonuclears, only cells of lymphocyte characteristics. There was nothing indicative of protozoa (Giemsa's stain). Smears from ulcerations of the second type showed the presence in abundance of a single organism, morphologically a corynebacterium. Polymorphonuclears were present in great profusion; no cocci. Among the methods of treatment reported negatively were mentioned the following: (*a*) artificial gastric juice; (*b*) excision of lesion; (*c*) cauterization with pure carbolic acid; (*d*) Bier's passive congestion; (*e*) massive doses of potassium iodide.

GANGOSA; WITH ADDITIONAL NOTES,

by Dr. O. J. Mink and Dr. N. T. McLean, passed assistant surgeons, United States Navy, Washington, D. C. Since the publication of their original paper on this subject in 1906, additional literature, not available at Guam, had been studied, and a few further facts regarding certain phases of the disease had been obtained. The disease had existed in Guam for at least one hundred and fifty years. Although only 125 cases had been examined at Guam, there were probably between 200 and 250 on the island, the population of which was about 11,000. The youngest ages at invasion were three and nine years; the oldest were fifty-four and fifty-nine years. In a series of 80 cases, 49 were in females and 31 in males. The natives of the various parts of the island were intimately associated by religious, marital and commercial relations, but there was no evidence to show that heredity played any part in the transmission of the disease. The native theory, and that held by the Spaniards, gave food a prominent place in the causation of the disease. They believed that such foods as decomposed or very salty fish, especially if eaten raw, uncooked taro and native pepper were the direct causes of the disease. This theory seemed improbable. The disease had been considered a late manifestation of syphilis, but the authors stated that during eighteen months spent in Guam they did not see syphilis of any type among the native population, and they did not believe that it existed there. Their observations led them to believe that if there was a specific infecting agency, the nature of it was yet undetermined. The majority of the cases occurred in pure blood natives. As the disease was not fatal, autopsy was only possible when death occurred from intercurrent disease. To those who had seen a case of gangosa, the diagnosis offered no difficulty. In a number of cases observed, the initial symptoms led to a diagnosis of tonsilitis, pharyngitis and laryngitis of a mild degree. All showed a slight rise of temperature, and complained of soreness in the posterior nares and pharynx, with stiffness in the muscles of deglutition. The throat symptoms became localized, and on the third day a patch of yellowish gray membrane was observed on the soft palate in the first case, the uvula in the second, and on the right pillar in the third case. The membrane was elevated, thick and tenacious. On removal, the denuded surface bled freely. Within twenty-four hours of the appearance of the membrane, the typical ulceration was established. On the area covered by the membrane, a number of small depressions appeared. The ulcer which was formed had a punched-out appearance, with undermined edges, and a deep, uneven floor, covered with a yellowish-white and very offensive discharge. The depth of the ulcer rapidly increased, until, in the cases of the uvula and soft palate, the tissues were perforated by the seventh day. These cases were still under observation. Fulminating gangosa was differentiated from diphtheria by the absence of Klebs-Lœffler bacilli, and by the typical mutilation in those cases which survived. Excepting in the fulminating type, the disease, *per se*, was never fatal. The mutilations and complications were permanent, and caused corresponding disability. The treatment was essentially local, and should aim to destroy the infected area.

Dr. W. F. Arnold, lieutenant-commander and surgeon (retired), United States Navy, said that he had been able to differentiate clinically the condition known as gangosa, and that he had been the first American to describe it as an entity on the island of Guam. In order to correct the misapprehension that syphilis did not exist on that island, Dr. Arnold said that during his short service there he had seen a native hospital attendant with distinct mucous patches, and subsequently he had found the native woman who had caused this man's infection.

NOTES ON CHRONIC ULCERS OF THE PHILIPPINES,

by Dr. George C. Shattuck, of Boston, Mass. This paper (which was read by title), gave the clinical notes and microscopical findings in 34 cases of chronic ulcerative processes occurring in patients who were all natives of the Philippines, with the exception of one, a Chinaman. Four different types of ulceration were studied. The first and second were not definitely diagnosed; they were probably infections *sui generis*. In the third type the weight of evidence was slightly in favor of syphilis. Many examples of this type were seen. In the fourth type the probability of syphilis was strong. The remaining cases of the series seemed to be variations of types three and four, which might all be placed in one group. Together, they would comprise 94% of the series (32 cases). The diagnoses were all made clinically, because microscopic findings were all negative or ambiguous. The cellular content of the exudate examined was nearly the same in all the cases. The same was true of the bacteria seen. Blastomycetes were found in the exudate of 2 cases, but were not proved to be of etiological importance. Spirocheta refringens and two other varieties of spirochetæ were observed, but they were not believed to bear a causal relationship to the ulcers. Evidence of division was seen among the spirochetæ. The view that spirocheta refringens was a bacterium was supported by strong evidence of transverse division.

FILARIASIS,

by DR. T. TANAKA, of Tokyo, Japan. (Read by title).

(*a*) TROPICAL FORMS OF PITYRIASIS VERSICOLOR. (*b*) FRAMBESIA TROPICA (YAWS). ITS ETIOLOGY, CLINICAL SYMPTOMS AND TREATMENT. (*c*) OBSERVATIONS ON TINEA IMBRICATA. (*d*) OBSERVATIONS ON A PECULIAR DERMATOMYCOSIS,

by DR. ALDO CASTELLANI, of Colombo, Ceylon. (Read by title.)

A DEMONSTRATION OF THE USES OF LIQUID AIR IN DERMATOLOGY,

by DR. CHARLES T. DADE, of New York.

Book Reviews.

The Practitioner's Visiting List. 1908. Philadelphia and New York: Lea Brothers & Co.

This visiting list is now in its twenty-second year of issue. Those who have used it hitherto appreciate its merits. It has been, as usual, revised and brought up to date. It needs no further recommendation.

The Physician's Visiting List (Lindsay & Blakiston's) *for 1908.* Fifty-seventh year of its publication. Philadelphia: P. Blakiston's Son & Co. 1907.

The Medical Record Visiting List or Physicians' Diary for 1908. New revised edition. New York: William Wood & Co. 1907.

These two visiting lists are familiar and always useful. They appear in essentially the same form year after year, and evidently meet the needs of the physicians for whose use they are particularly prepared. The list prepared by P. Blakiston's Son & Co. is somewhat smaller than that of Wood & Co., and does not contain quite so much information as the latter. We recommend them both to our readers, as we have frequently done before. Some such list is indispensable for the active practitioner who desires to be systematic in his work.

The Operating Room and the Patient. By RUSSELL S. FOWLER, M.D., Professor of Surgery, Brooklyn Post-Graduate Medical School; Chief Surgeon, First Division, German Hospital; Surgeon, Methodist Episcopal Hospital, Brooklyn, N. Y. Second edition, revised and enlarged. Philadelphia and London: W. B. Saunders Company. 1907.

Fowler's valuable book of 284 pages is an admirable supplement to the *Petite Chirurgie* on which we have commented below. He discourses upon the operating room, the preparation of the patient, the care of instruments, dressings and ligatures, the preparation of the surgeon and his assistants; and, most important of all, perhaps, he gives us six admirably concise chapters on the after-treatment of wounds and special infections. The book should be read by surgical assistants, hospital superintendents and operating nurses. It is full of useful hints for the country surgeon also.

Petite Chirurgie et Pratiques Spéciales Courantes. Par P. SOUBEYRAN, Professeur Agrégé a le faculté de médecine de Montpellier; et P. ARDIN-DELTEIL, Professeur de Clinique Médicale a l'école de Médecine d'Alger; avec 326 figures dans le texte. Montpellier: Coulet et Fils, éditeurs. Paris: Masson et Cie., éditeurs. 1908.

This little book of 400 pages on minor surgery is distinctly refreshing, not because the authors have anything especially new to tell us, but because their method of presentation is novel, and the illustrations of the text are graphic and admirable. The book begins with various chapters on technic, — not altogether satisfactory perhaps to American surgeons; for example, the use of rubber gloves is not commended. Then follow a series of chapters dealing in extensive detail with simple matters, generally slighted, with methods of giving injections of all sorts, with the removal of foreign bodies, with instructions on the proper handling of instruments, on tapping, on lumbar puncture, on gastric lavage, on fistula, minor gynecology and the use of sounds and catheters. On page 347 there is an illustration of horror, — a penis equipped with a permanent drainage catheter, tied in by means of a string fastened tightly about the glans. In spite of its occasional absurdities and shortcomings, however, the book is extremely useful and suggestive. Again we commend to American writers the capital and accurate outline-drawings with which the pages abound.

The Treatment of Fractures; with Notes upon a Few Common Dislocations. By CHARLES LOCKE SCUDDER, M.D., Surgeon to the Massachusetts General Hospital; Lecturer on Surgery in the Harvard University Medical School. Sixth edition, thoroughly revised and enlarged; with 856 illustrations. Philadelphia and London: W. B. Saunders Company. 1907.

The publishers inform us that over "twenty-five thousand copies of this remarkable work have been sold." Certain it is that Scudder's useful book holds a foremost place as a manual of treatment, and this sixth edition is an improvement upon its predecessors. It is larger; it embraces the treatment of dislocations as well as of fractures. The author adds to his previous writing a number of excellent and concise statements regarding the wisdom of operating upon certain fractures; he calls especial attention also to skull fractures in the newborn, to fractures of the bones of the face, and to fractures of the radius, the neck of the femur, and the carpal scaphoid; to unreduced dislocations of the elbow, to acromioclavicular dislocations, to pathological fractures, to old fractures of the radius, to Volkmann's contracture; and adds an important section on the treatment of ununited fractures. Again we admire the excellent work of the publishers, and again we commend this book to the profession.

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INFECTION FROM FLIES.

We have, from time to time, commented on the active crusade being taken in many quarters, first, to discover the dangerous attributes of the common fly, and, secondly, to devise adequate means of extermination. The prevalence of the fly during the summer is such that every possible opportunity is afforded for the propagation of infection and all the disaster to which this may lead. The extermination of the mosquito is relatively a simple matter as contrasted with that of the ubiquitous fly, but the latter must certainly be attempted if the present indications of its danger in the spread of infectious disease is substantiated. In this connection an important report has recently been made public in New York, to which we are glad to draw attention.

The Committee on Pollution of the Waters of New York of the Merchants' Association has sent to Governor Hughes an interesting and suggestive statement on infection from flies, which was prepared by Dr. Daniel D. Jackson, bacteriologist to the committee. The report was commended to the Governor's careful attention by Edward Hatch, Jr., chairman of the committee, among the other members of which are J. Pierpont Morgan and Dr. Albert Vander Veer. During the past summer and through the month of September, flies were collected each day from flytraps, at the piers all along the water-front of the city, and systematic examinations of these were made in Dr. Jackson's laboratory. At the same time, a careful investigation into the sanitary condition of the entire water-front was made. The results showed that the flies were thickest in number at the points where there was the most sewage, and where there was but little sewage there were few flies. Flies examined early in the season were found to carry less bacteria than in the heated time. The largest number of bacteria found in a single instance was 100,000, which were carried by a fly caught at a South Street pier on the East River in the hot weather. To just what extent the intestinal diseases prevalent in the summer season may be due to flies is a question not very easy to determine, but, at all events, the report shows that the mortality from these diseases "rose above the normal at the same time at which the flies became prevalent, culminated at the same high point, and fell off with a slight lag at the time of the gradual falling off of the prevalence of the insects." That flies are largely responsible is claimed in the report, which goes on to say that this so-called harmless insect is one of the chief sources of the infection, which in New York City causes annually about 650 deaths from typhoid fever and about 7,000 deaths from other intestinal diseases. The fall rise in typhoid, if set back two months from the report of deaths to the time of the contraction of the disease, would, it states, correspond exactly to the curve of prevalence of flies and to the curve of rise in deaths from intestinal diseases of both children and adults. "It also corresponds to the temperature curve. We are, therefore, erroneously inclined to view the disease as due to hot weather. While climatic conditions, by reducing the vitality, favor the contraction of the disease, they are not the real cause of it. Temperature does not produce the specific which invariably accompanies the disease. The activity of the house-fly is in proportion to the temperature, and the time at which it is most active and most numerous corresponds exactly with the time of the contraction of typhoid fever and other intestinal diseases."

THE REGISTRATION OF OPTICIANS.

A bill for the registration of opticians, which is to be introduced into the legislature this winter, has been mailed to every medical practitioner in the Commonwealth, accompanied by a very artfully worded circular asking for the support of medical men. A communication in another column of this issue of the Journal gives the history of the movement and should be read by

physicians before giving a hasty decision on the questions propounded in the circular.

It strikes us as, in reality, an attempt to acquire a quasi-medical registration under which opticians can advertise to cure headaches and other nervous disabilities. Under this bill, these gentlemen do not ask to be registered as opticians, but as "optometrists." Apparently, it is not the purpose of this board of opticians, if established, to examine applicants as to their knowledge of the manufacture of lenses and the proper fitting of the frames, but in regard to their ability to conduct examinations of the eyes of persons suffering from ocular defects. It is, we fear, the attempt of another group of that great body of men, who are always hovering about the outskirts of medicine, to gain a legal right to practise medicine without a medical education.

In this instance, they ask to be registered; and one of the provisions of the act is to give the board of registration the right to issue a certificate of proficiency over its common seal. Undoubtedly the seal, when affixed to the "optometrist's" diploma, will be large and have the arms of the Commonwealth of Massachusetts prominently emblazoned thereon. The lengths to which these gentlemen are prone to proceed was exemplified, not long ago, in a state in which an act of registration has, unfortunately, been enacted, when a duly registered optician publicly took to task the municipal authorities because they had had the examination of the eyes of certain school children conducted by oculists, stating that they should have called in "optometrists" who were licensed by the state to do such work, and were the only proper persons to make such examinations.

It would seem that specialization in medicine is producing new and dangerous classes of quasi-medical practitioners who advertise themselves as specialists. These men now wish to induce the state to legalize their practice of medicine without passing the medical board. We have seen a certain group of masseurs develop themselves into the "osteopaths"; now come the opticians, as "optometrists." Next may come the gentlemen who make and sell foot-plates, dubbing themselves with a new Latin or Greek name. After them, doubtless, the individuals who advertise facial massage and scalp treatment with another newly coined name, beginning with "derm," in all probability, and so on. The final result might be that a large part of the field of medicine would be covered by duly licensed and registered practitioners, all without a medical qualification.

REPORT OF THE CAROLINE BREWER CROFT FUND CANCER COMMISSION.

THE fourth report of the Caroline Brewer Croft Fund Cancer Commission of the Harvard Medical School is in our hands. The first report of this commission was issued in 1900, and during the seven intervening years, a large amount of experimental work has been done by various investigators, much of which has of necessity been a repetition of experiments previously published, particularly in relation to the parasitic origin of cancer. The general attitude of this commission in regard to the parasitic theory is well known. In its opinion it remains unproved. The commission is now under the direction of Dr. E. E. Tyzzer, of the Harvard Medical School, and the three papers presented in this report are the result of his researches. They are concerned especially with the question of inoculable tumors in mice. This work has been carried out in very great detail and is set forth with admirable photographic reproductions of the pathological conditions developing in the animals studied. In the introduction to this fourth report, Dr. J. Collins Warren, chairman of the commission, expresses the hope that the general investigation of cancer will in the future be carried on in a much more comprehensive way than has hitherto been done, and that endowments may be made to bring the clinical and laboratory work into closer relation than has hitherto been possible. In fact, the commission goes so far as to say that the investigation of cancer has now reached a point when it should be taken up on lines even broader than those laid down for the study and prevention of tuberculosis. Enough has certainly been done up to this time to show how difficult and elusive the problem is, and how much preliminary work of a negative sort must be done before positive advances toward the comprehension of the real nature of cancer and its causative agencies can be made. It is certainly to be hoped that sufficient funds may be forthcoming to render possible the most exhaustive work leading toward a solution of the problem.

MEDICAL NOTES.

AMERICAN JOURNAL OF UROLOGY. — Beginning with January, the above journal, which will also embrace venereal and skin diseases, passes under the editorial management of Dr. William J. Robinson, of New York.

Bequests. — By the will of the late Miss Zela Gibbs, of Newport, N. Y., St. Luke's Hospital in New York receives $100,000, and the residue of the estate after other bequests are paid. The Orthopedic Dispensary and Hospital receives $25,000.

Lord Kelvin to be Interred in Westminster Abbey. — It is proposed that the body of Lord Kelvin be interred in Westminster Abbey. But four other men of science have been hitherto so honored, — Newton, Herschel, Darwin, and Lyell.

A Worthy Record of Descendants. — A woman by the name of Ann Winn has recently died at the age of eighty-nine, near Falmouth, leaving 151 descendants. She herself had 17 children, the eldest of whom is now seventy-one. There are 75 grandchildren and 59 great-grandchildren. The woman's husband was a blacksmith, and it is said she often assisted him with bellows and hammer.

A Presidential Possibility. — An "underground movement" is said to be on foot "to boom" Attorney-General Bonaparte for President. The campaign managers are said to be physicians, and the issue the "extermination of the criminal classes." The medical profession and the proposed candidate are supposed to agree on the desirability of segregating habitual criminals. A further platform is not stated.

Deaths in Coal Mines. — Recent statistics show that during the last seventeen years, 22,840 men have been killed in the mines of this country. During the last six years as many fatalities have occurred as during the preceding eleven years. In 1906, 6,861 men were killed or injured, and the record this year bids fair to surpass any previously made. It is worthy of mention that three times as many are killed in this country as in most of the European countries to each 1,000 employed.

Death of Dr. William Bayard. — The death is announced of Dr. William Bayard, a practitioner of medicine in St. John, New Brunswick, for seventy years. Dr. Bayard continued in active practice almost up to the end of his life of ninety-four years. He was graduated from Edinburgh University in 1837, and quickly took a prominent place in various departments of medical work in St. John, where he began his practice. In 1895 he was president of the Canadian Medical Society. Last August, the seventieth anniversary of Dr. Bayard's graduation, Edinburgh University conferred upon him the degree of LL.D. He was then supposed to be the oldest living graduate.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 25, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 58, scarlatina 47, typhoid fever 3, measles 26, tuberculosis 60, smallpox 0.

The death-rate of the reported deaths for the week ending Dec. 25, 1907, was 24.64.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 21, 1907, was 283, against 210 the corresponding week of last year, showing an increase of 67 deaths and making the death-rate for the week 24.22. Of this number 146 were males and 137 were females; 275 were white and 8 colored; 172 were born in the United States, 104 in foreign countries and 7 unknown; 60 were of American parentage, 178 of foreign parentage and 45 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 51 cases and 1 death; scarlatina, 35 cases and 1 death; typhoid fever, 1 case and 1 death; measles, 34 cases and 0 deaths; tuberculosis, 57 cases and 16 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 60, whooping cough 0, heart disease 27, bronchitis 9 and marasmus 3. There were 15 deaths from violent causes. The number of children who died under one year was 54; the number under five years 71. The number of persons who died over sixty years of age was 91. The deaths in public institutions were 72.

There were 8 cases and 4 deaths reported from cerebrospinal meningitis during the week. There were also 11 deaths reported from la grippe.

The Diagnosis of Malaria and Typhoid Fever in Connecticut. — The Connecticut State Board of Health announces to physicians and health officers of that state that its laboratory is now prepared to undertake the diagnosis of malaria, and outfits for this work are now in the hands of the health officers and may be obtained by physicians wishing to make use of them. In using these outfits, physicians are requested to follow the directions accurately, since the diag-

nosis of malaria is difficult, and is impossible unless the specimen sent is prepared carefully.

The laboratory is beginning the use of a new style of typhoid outfit which it is believed will give more accurate results. The new outfits are being gradually substituted for the older style, and health officers are requested to furnish the new style of outfit to physicians instead of the old style, when they have them.

NEW YORK.

TRAVELING TUBERCULOSIS EXHIBIT. — The New York State Charities Association is maintaining a traveling tuberculosis exhibit which is being sent to various cities and towns throughout the state. It has just been employed at a successful two weeks' campaign in Utica, where a committee on the prevention of tuberculosis has been organized and free dispensary for consumptives established.

NEW YORK ACADEMY OF SCIENCES. — The annual meeting of the New York Academy of Sciences was held on Dec. 16, when Charles F. Cox was elected president, and Dr. Adolf Meyer, director of the pathological institute of the New York state hospitals, one of the three vice-presidents. The meeting was followed by the annual dinner, after which the retiring president, Dr. N. L. Britton, made an address on the organization and construction of the New York Botanical Garden in Bronx Park, of which he is at present the director.

ACCIDENTS FROM PUBLIC CONVEYANCES. — The reports filed with the Public Service Commission show that during the months of September, October and November, no less than 155 persons were killed and 500 seriously injured in New York City by the street cars, and steam, elevated and subway trains. Prior to the inauguration by the Public Service Commission, which was created by the last legislature, of its system of accident reports, there was no adequate way of determining the number of persons killed or injured within the city limits by the different traction lines, but these companies are now required to file reports of all accidents with the commission.

TYPHOID FEVER AT TRENTON, N. J. — The epidemic of typhoid fever, now prevailing at Trenton, N. J., seems to be unquestionably due to the use of Delaware River water. Up to Dec. 15, fifty-five cases had been reported during the present month, and Dr. A. C. Hunt, chief sanitary officer of the State Board of Health, has expressed the fear that worse is to come unless existing conditions are quickly remedied. The State Health Department has repeatedly warned the city against such an epidemic, but it appears that the expense of construction has proved too much of an obstruction to the installation of a filtration plant by the board of water supply. There is now some talk of obtaining a permanent supply of pure water from the Sorrell Mountains, to be conveyed by means of an aqueduct, but, of course, such a project would necessarily require a very considerable time to carry out.

DEATHS FROM INFLUENZA. — The present year will show a greater mortality from influenza than any year since 1891, when in the city of New York, then comprising the present boroughs of Manhattan and the Bronx, the number of deaths from this cause, reached 854. The second highest mortality was in 1895, amounting to 567, while the lowest record was in the year 1902, when there were only 102 deaths reported from influenza. In the first eleven months of 1907, there were 509 deaths in Manhattan and the Bronx, as against 200 in the corresponding period in 1906, or an increase of more than 150%. During the first two weeks of December, the death-rate from influenza was even proportionately larger; so that the record of 1907 will undoubtedly exceed that of 1895. In all the large hospitals, there are now many influenza patients, while an unusually large number of those suffering from the disease in less severe form are receiving treatment in their out-patient departments, and in the various dispensaries.

Obituary.

HENRY PATTERSON LOOMIS, M.D.

DR. HENRY PATTERSON LOOMIS, of New York, the only son of the late Prof. Alfred L. Loomis, died from pneumonia, after a short illness, on Dec. 22, in the forty-ninth year of his age. He was born in New York City, where he prepared for college, and in 1880 he was graduated from Princeton. In 1883 he received the degree of M.D. from the medical department of the University of the city of New York, and, after serving as interne at Bellevue Hospital, he studied abroad for two years, taking special courses at the universities of Heidelberg and Vienna. On his return he became associated in practice with his father, and later was appointed professor of pathology in the New York University medical school. He was also made visiting physician to Bellevue Hospital, and in 1896 visiting physician to the New York Hospital, both of which posi-

tions he retained up to the time of his death. When the new Cornell University Medical College was organized in 1898 he became a member of the faculty as professor of Materia Medica, Therapeutics and Clinical Medicine, and this professorship he also still occupied at the time of his death. The distinguished son of an eminent father, Dr. Loomis was recognized as one of the leading pathologists and exponents of internal medicine in New York, and his frequent contributions to medical literature were of a high order. One of the most notable of these was a paper which he read in a symposium on pneumonia in December, 1905, before the Medical Association of the Greater City of New York, which was participated in by Drs. Hobart A. Hare, James M. Anders and J. Madison Taylor, of Philadelphia, and Drs. Andrew H. Smith, William H. Thomson and others, of New York. In this he presented a *résumé*, very carefully prepared in minute detail, from original sources, of the existing treatment of lobar pneumonia as exemplified by the routine treatment of the disease in four of the large New York hospitals. The hospitals taken for comparison were Bellevue, the New York, the Presbyterian and Roosevelt, the material collected showing an enormous amount of painstaking work on Dr. Loomis's part, and in concluding the paper he gave some practical deductions which clinical experience seemed to warrant as regards the treatment of pneumonia. Dr. Loomis was a man of most genial temperament, beloved by his associates and patients, and always very popular with his classes, and it seems sad indeed that he should thus be cut off in his prime and at the height of his useful medical career. His wife was Miss Julia Stimson, a sister of the distinguished surgeon, Dr. Lewis A. Stimson, and she, with two children, a son and daughter, survive him. The son, Alfred L. Loomis, is now a sophomore at Yale.

Current Literature.

MEDICAL RECORD.
Nov. 23, 1907.

1. KELSEY, C. B. *On Perianal and Perirectal Abscess.*
2. KILIANI, O. *The Surgical Treatment of Ulcer of the Stomach.*
3. BRYANT, W. S. *The Nose in Its Relation to Epilepsy.*
4. LIVINGSTON, A. T. *The Indications for Ergot, aside from Its Obstetrical Use.*
5. CROTHERS, T. D. *The Action of the Radiant Light Bath in Nervous Diseases.*
6. CAMP, C. D. *Motor Paralysis as an Early Sign of Tabes Dorsalis.*
7. VAN BAGGEN, N. J. P. *The Misuse of the Voice and Its Cure. Articulation.*

NEW YORK MEDICAL JOURNAL.
Nov. 23, 1907.

1. *SAXE, DE S. *A Study of Sago Bodies and Other Vesicular Elements in Massage Urine in Their Relations to Diagnosis.*
2. PIFFARD, H. G. *A New Staining Method for Microorganisms.*
3. TRACY, E. A. *A Note on Surgical Splinting.*
4. GRADLE, *Bilaterality and One-Sidedness in Diseases of the Eye.*
5. KENNEDY, J. W. *Frenzied Surgery of the Abdomen.*
6. BARR, R. A. *Perineorrhaphy.*
7. *BERKELEY, W. N. *A Brief Report of Further Experiences in the Use of Parathyroid Gland for Paralysis Agitans.*
8. WIEDER, H. S. *Sarcoma of the Eyelid.*
9. SCHWARTZ, L. H. *Pediatric Hints.*

1. Saxe was able to find either skins, sago bodies, or sugar granules after prostatic massage in the urine of 12 out of 26 young men, whose seminal vesicles and prostate were apparently normal, and who presented no evidence of venereal infection, either from the history or physical examination. The presence of vesicular casts does not of itself indicate inflammation, unless they contain pus cells and bacteria. The casts arise from stagnation of the secretion of the vesicles, with consequent absorption of the fluid portion, and indicate only atony of the vesicular walls. Vesicular shreds with pus, epithelium and many spermatozoa occur in chronic vesiculitis. The diagnosis of vesiculitis is only possible by finding pus cells, vesicular epithelia, spermatozoa and bacteria. The latter are usually streptococci, less frequently gonococci, occasionally staphylococci and colon-like bacilli.

7. Berkeley frankly confesses that the proof of specific relation between Parkinson's disease and the parathyroid gland is quite inadequate. Autopsy findings are, on the whole, against such a relation, although the parathyroid seemed pathological in a few cases. Such a relation is suggested by the symptoms in animals after complete parathyroid excision, *viz.*, twitching of the voluntary muscles, tetany and convulsions. The writer has employed preparations from the parathyroid glands of the ox, both by mouth and subcutaneously, in some 75 cases of Parkinson's disease. Eighteen of the 30 cases which were followed were progressively benefited, some apparently remarkably so. The benefit consisted in diminished rigidity, pain, salivation and shaking, relief of restlessness and insomnia, and greatly increased voluntary control of muscles. The writer promises a further report in collaboration with S. P. Beebe.

[R. I. L.]

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
Nov. 23, 1907.

1. DERCUM, F. X. *Hysteria. Its Nature and Its Position in Nosology.*
2. SIMMONS, G. H. *What the American Medical Association Stands For.*
3. *FREEMAN, R. G. *The Ferments of Milk and Their Relation to Pasteurization.*
4. OCHSNER, E. H. *Potential and Acquired Static Flatfoot. Its Etiology, Symptomatology and Non-Operative Treatment.*
5. PORTER, W. D. *A Method of Bimanual Rotation in the Vertex.*
6. *KILMER, T. W. *Whooping Cough. Five Hundred and Fifty Cases Treated by the Abdominal Belt.*
7. POND, A. M. *Comparative Study of Renal and Biliary Disease in Which Calculi Figure Prominently.*
8. LOWENBURG, H. *The Diagnosis and Treatment of Convulsions in Children.*
9. MILLER, J. M. *Gangrene of the Lung in Early Life.*
10. PRICE, G. H. *Treatment of Purulent Ophthalmia.*
11. THEOBALD, S. *The Conservative Treatment of Chronic Suppuration of the Middle Ear.*

3. Freeman finds that heating of milk for forty minutes at 140° F. (60° C.) does not interfere with its biologic properties or chemical composition, and also kills the bulk of the bacteria, including the tubercle bacillus.

6. Kilmer reports a series of 550 cases of whooping-cough treated by the abdominal belt. These cases represent the observations of some thirty pediatricians. Most of the observers testified to the almost constant benefit noticed regarding the cessation of vomiting and moderation of cough. It is in no sense a curative procedure. The belt is made of linen with a strip of silk elastic webbing two inches wide inserted in either side. The belt laces in the back and is worn over the undershirt. The width is

four to eight inches, depending on the size of the child. The length is about three inches less than the circumference of the child's abdomen at the navel. At first, only slight constriction is used, which is increased until the vomiting is controlled. [R. I. L.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.
NOVEMBER, 1907.

1. *BILLINGS, F. *Gastromotor Insufficiency Due to Perigastric and Duodenal Adhesions.*
2. DOCK, G. *Chylous Ascites and Chylous Pleurisy in a Case of Lymphocytoma Involving the Thoracic Duct.*
3. *MOFFITT, H. C. *A Contribution to the Study of Long-Continued Fevers.*
4. *EINHORN, M. *True Intestinal Dyspepsia.*
5. *SCHMOLL, E. *Paroxysmal Tachycardia.*
6. CLAYTOR, T. A. *Dilatation of the Heart.*
7. HENDERSON, V. E. *A Résumé of the Physiology of the Kidney, with a View to Therapeutics.*
8. DENCH, E. B. *Otitic Brain Abscess.*
9. BUERGER, L. *Actinomycosis of the Skin of the Foot.*
10. *RIESMAN, D. *Hemorrhages in the Course of Bright's Disease, with Especial Reference to the Occurrence of a Hemorrhagic Diathesis of Nephritic Origin.*
11. MCKEE, H. *A Clinical Study of Five Hundred Cases of Conjunctivitis.*
12. *SCHORER, E. H. *The Opsonic Index in Erysipelas and Its Relation to Treatment by Inoculation of Killed Streptococci.*

1. Billings describes the symptoms and signs of motor insufficiency of the stomach due to atony or to pyloric obstruction, or, as the title of his paper indicates, to perigastric and duodenal adhesions. These adhesions are most often due to cholecystitis, less often to chronic ulcer or to operations. The condition may be masked by symptoms of the underlying cholelithiasis or ulcer; it is to be detected by signs of stasis in the stomach contents in the absence of evidence of ulcer. Neurotic symptoms are often present. One case is described at length in which the diagnosis was made and the condition relieved by operation, with temporary improvement. Neurotic symptoms, however, recurred without objective signs of abnormal gastric function.

3. Moffitt reports a case of frequently recurring attacks of fever for a year or more, finally fatal. Autopsy proved the presence of lymphosarcoma of the liver, spleen and lymph glands. Attention is called to the frequent occurrence of fever in tuberculous lymphomas, in Hodgkin's disease, sarcoma and carcinoma. As other causes of obscure intermittent fevers, are mentioned pyelitis, endocarditis, intermittent hepatic fever, visceral syphilis, tuberculosis and exophthalmic goiter.

4. "Intestinal dyspepsia" Einhorn defines as including all conditions in which the digestive function of the intestinal tract is disturbed. Two main classes of cases are described: "Dyspepsia intestinalis universalis," in which digestion of all three classes of food substances is at fault; and "dyspepsia intestinalis partialis," divided into subclasses, when digestion of only one or two forms of food is disturbed. In preference to Schmidt's test diet, the author uses his own "bead test," giving beads containing meat, fat, fish-bone, thymus, potato and catgut, and examining their contents when they are recovered from the stool. Cases are cited, illustrating the conditions described and method of diagnosis. As to treatment, the patient is put on a liquid or semi-liquid diet, and pancreon or takadiastase (gr. v, t. i. d.) is given, the former to promote digestion of proteids or fats, and the latter in amylaceous dyspepsia.

5. Schmoll's article is an attempt to show that in paroxysmal tachycardia we have to deal not with a single pathological entity, but with at least four groups as follows: (1) cases in previously damaged hearts; (2) cases from dysthyreosis; (3) cases with lesions of the central nervous system; and (4) cases of apparently functional character. The condition is characterized by attacks of suddenly appearing tachycardia, lasting ten or fifteen minutes up to five days, ceasing as suddenly as they began. In the attack the heart rate is either double or four times the normal. Cases are described showing how these features may occur in connection with each of the etiological factors mentioned. Most attention is directed toward the so-called idiopathic or functional cases. These were carefully studied by means of tracings, in the attempt to explain the occurrence of the increased heart rate upon physiological grounds. Through these tracings it is made evident that the tachycardia is the result of extra systoles, in some instances apparently originating in the bundle of His and involving only the ventricle, and in other instances, by the presence of an auricular wave, more probably originating in the venous sinus.

10. Riesman mentions a number of manifestations of tendency to hemorrhage occurring in connection with Bright's disease. These include epistaxis, purpura, metrorrhagia, hemoptysis, hematemesis, hematuria and bleeding into the brain, eye and ear. In a few cases, hemorrhage has occurred from multiple sources, indicating a true hemorrhagic diathesis. The author favors the view that the nephritis is the cause of the tendency to hemorrhage, most probably by toxic influence, possibly aided by arterial disease and hypertension. The prognosis in these hemorrhagic cases is unfavorable.

12. Schorer reports results of treatment of 37 cases of erysipelas by means of injections of killed cultures of streptococci. The organisms were obtained from cases of erysipelas, but it was not feasible to use, in each case, organisms obtained from that case. The technic is briefly described and results are summarized and tabulated. In general the outcome was inconclusive. The opsonic index was found excessively variable and of no value as an indication of the severity of the disease. The injection of killed streptococci, on the whole, increased the opsonic index, but no corresponding improvement of the patient was observable. [F. W. P.]

ANNALS OF SURGERY.
DECEMBER, 1907.

1. SEELIG, M. G. *Carcinoma of the Esophagus.*
2. *JACKSON, C. *Tonsillar Hemorrhage and Its Surgical Treatment.*
3. STERLING, R. A. *Lingual Goiter.*
4. VANDERVEER, E. A. *Report of a Case of Sarcoma of the Thyroid.*
5. CORSON, E. R. *Narath's Modification of Talma's Operation for Hepatic Cirrhosis.*
6. JAYNE, W. A. *Acute Pancreatitis.*
7. *VANCE, J. *Primary Fibromyomata of the Broad Ligaments.*
8. SAMPSON, J. A. *The Renal Catheter as an Aid in the Diagnosis of Valve-like Obstruction of the Ureter.*
9. SUMMERS, J. E., JR. *The Conservative Surgical Treatment of the Hypertrophy of the Prostate Gland in the Very Feeble and Aged.*
10. *BARNEY, J. D. *Epithelioma of the Penis. An Analysis of One Hundred Cases.*
11. *ANDREWS, E. W. *The "Bottle Operation" Method for the Radical Cure of Hydrocele.*
12. THURSTON, E. D. *Bilateral Tuberculous Bursitis of the Hips.*
13. PETERKIN, G. S. *The "Suspender" Abdominal Bandage. The Four-Tailed Genital Bandage.*
14. *BEACH, R. M. *Surgical Progress. Excerpts from Transactions of the German Congress of Surgery, 1907.*

2. Jackson believes tonsillotomy an unjustifiable operation: first, because it leaves parts of the gland as a seat for future infections and inflammations whose adequate drainage is prevented by scar-tissue; second, because it severs vessels at a point where disease process hinders their normal retraction and makes hemorrhage more likely than after tonsillectomy. The best treatment for post-operative tonsillar hemorrhage he thinks to be direct torsion of the bleeding point with a hemostat, applied while the anterior pillar is fully retracted. If this fails, he recommends immediate external carotid ligation.

7. Primary intraligamentous fibroids, not connected with the uterus, are rare. Vance reports a case of his own, and summarizes others from the literature. The condition is rarely bilateral, and may be associated with uterine fibroids, in which case the diagnosis cannot be made before operation. When the uterus is not also involved, the absence of menstrual disturbance is an important diag-

nostic sign. Fibroid of the broad ligament may easily be mistaken for ovarian cyst, especially since it is very liable to cystic degeneration.

10. Careful analysis of 100 cases of cancer of the penis seems to show that phimosis is the predominant predisposing cause, being present in 85% of the series. Jews are notably immune. These facts, Barney believes, are strong arguments for prophylactic circumcision, when phimosis persists after middle life. The progress of the disease is relatively slow, the prognosis, after early radical operation, relatively good, 38% of all cases being cured. Amputation does not necessarily destroy sexual power or cause disturbance of micturition.

11. Andrews modifies Jaboulay's eversion method for radical cure of hydrocele by making only a 2 cm. incision into the funicular portion of the sac. Upon delivery of the testicle, this incision contracts about the cord, leaving the sac inside out, and secure in position without need of suture, except for closure of the scrotal wound.

14. The use of balsam of Peru as a primary dressing in lacerated wounds of all varieties and extent is reported, apparently with gratifying results, which Suter attributes to mechanical, bactericidal and direct chemotactic action of the drug. The urine should be watched for evidence of absorptive irritation of the kidneys.

[R. M. G.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 42. OCT. 17, 1907.

1. TILLMANS, T. *The Treatment of Fractures.*
2. *RIEDEL. *Displaced Right Kidney Fastened by Adhesions.* (Concluded.)
3. MARTENS, M. *Appendicitis with Purulent Inflammation of the Portal Vein.*
4. *RIBBERT, H. *Portals of Entry for Tuberculosis.*
5. *PAL, J. *Mydriatic Substances in the Urine.*
6. KLEINBERGER, C. *Hemoglobinophilic Bacilli as Saprophytes.*
7. *HEYMANN. *Experiences with the Quartz Lamp.*
8. SCHUMM, O. *The Benzedin Blood Test.*

2. Riedel discusses 130 personal cases of displaced right kidney fastened by adhesions in abnormal positions. Only 7 of these were in men. The clinical pictures were those usually described. If there was a tumor present, it was due to an exacerbation of a hydronephrosis which, if infected, caused fever and albuminuria; if not, the urine was normal. This is similar to the action of the gall bladder when distended and stones present. In other cases, violent pains and vomiting may suddenly develop, without fever or changes in the urine, due to adhesions about a displaced kidney. The liver is displaced in one half the cases, often occupying the normal position of the kidney. Tight skirt bands, when worn without corsets, he thinks are liable to cause these displacements. The varying position of the adhesions caused varying clinical pictures. The appendix may be constricted or adhesions may develop to the liver or anterior abdominal wall. In some cases, apparently insignificant adhesions caused uncontrollable vomiting and abdominal colic. He states that he does not know of any operation that is so beneficial in its results as that of fixation of a displaced kidney fastened by adhesions. In simple wandering kidney he does not advise operation.

4. Ribbert briefly reviews the modern theories of how the tubercle bacillus gains its entry into the body, and criticises the views of Aufrecht and others who maintain that the primary infection is usually hematogenous, with a portal of entry in the tonsils or mouth. He reaffirms his own conviction that inhalation is the chief source of infection in man.

5. Pal states that the observation of Schur and Wiesel that the serum of nephritis contains mydriatic substances induced him to carry out similar experiments with the urine of patients suffering from various affections The test was carried out on the enucleated eye of the frog Eighty-one cases in all were tested. The reaction was not present in any of the normal cases; it was present in 78% of the cases of nephritis and in 7% of the cases of other diseases, and in 33% of 18 cases of pregnancy. The question is to be investigated further, and the author suggests that the mydriatic action may be due to the excretion of adrenalin.

7. Heymann reports the results obtained in the treatment of various skin diseases by means of the quartz lamp as compared with the Finsen lamp, or its modifications. He concludes that it is more convenient to manipulate, less expensive, requires smaller amounts of current, and easily causes deep necroses that are slow to heal.

[L. G. M.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 42. OCT. 21, 1907.

1. *V. BAUMGARTEN, P. *Pathological-Histological Tissue Changes after the Injection of Alcohol.*
2. DAELS, F. *The Action of Yohimbin on the Female Genitalia.*
3. *BECK, C. *The Use of the X-ray after Surgical Operations on Malignant New Growths.*
4. *WITTE, J. *The Solms and Jakoby Method of Quantitative Pepsin Estimation.*
5. MUSZKAT, A. *Periodic Appearance of Mucus in the Bowel.*
6. BULLING, A. *A Case of Actinomycosis of the Lung.*

1. Baumgarten has made a large number of observations on animals after subcutaneous injections of alcohol. No local necrosis or abscess formation was found at the point of injection. Further, no formation of new connective tissue in the liver or elsewhere was noted. He did find, in many cases, erosions of the mucous membrane of the stomach and intestines. From these experiments, the author suggests that alcohol is not a causal, but a predisposing, factor in cirrhosis of the liver in man.

3. Beck reports 5 cases in which, after removal of malignant new growths, the operation site was subjected to vigorous x-ray treatment until inflammatory reaction set in. In these cases there has been no return of the tumor. The author believes that in all cases of infiltrating new growths of skin or subcutaneous tissues, the above procedure is a most valuable one.

4. Witte describes the Solms-Jakoby method of pepsin estimation. A mixture of $\frac{n}{10}$ HCl and sodium chloride ricin solution is used as a test fluid; it is milky in appearance. When mixed with fluids containing pepsin, the milky precipitate is dissolved. The gastric juice to be tested is mixed with the test fluid in different dilutions in separate test-tubes, 1: 50, 1: 100, etc., depending on the amount of free HCl present. After three hours in the incubator the tubes are examined, and the greatest dilution tube in which the precipitate has cleared is taken as the one showing the pepsin content. The author finds a relation in all cases between the amount of HCl and the amount of pepsin, but it is not a constant one. His results differ from many observers, in that he finds a diminution of the pepsin content in cases of functional disturbances of the stomach, as well as in organic disease. This method is simple, cheap and accurate, and can be performed by the practitioner.

[R. D.]

No. 43. OCT. 28, 1907.

1. LEWIN, L. *The Results of Inhalation of CO.*
2. *CITRON, J. *Serum Diagnosis of Syphilis.*
3. EINHORN, M. *The Diagnosis and Treatment of Ileus.*
4. KERSTEN. *A Case of Congenital Stricture of the Ileum.*
5. SCHRÖDER, K. *The Guaiac Test for Blood.*
6. BORSE, B. *Arthritis and Its Relation to Venereal Disease.* (Continued article.)
7. *DIESLING. *The Significance of Pigment in Malaria.*

2. Citron finds it possible to recognize antibodies in the serum of nearly every syphilitic, no matter what stage of the disease is present. Also in 80% of paretics, the antibodies are demonstrable in the spinal fluid. The author believes that the presence of such antibodies means an active syphilitic process, and that their absence may be interpreted as evidence of cure or latency. The increase in the reaction is an indication for further anti-specific treatment. He concludes from his observations that, firstly, the longer the toxin of syphilis has affected the

body, and the more numerous the relapses it has caused, in so much is the antibody content of the serum more constant and more marked; secondly, the earlier the mercury treatment has been instituted, and the longer it has been applied, by so much is the antibody content lessened.

7. Diesling claims that quinin acts by combining with the hemoglobin of the red cells, and that this combination is visible through the microscope. The clinical course of malaria may be watched and predicted by observations on the pigment excretion in urine and feces. The life cycle of the parasite depends on the absorption and assimilation of pigment. The author points out that many substances have great influence on the hemoglobin combinations, and that for a successful treatment of the disease, it only remains to select such substances that do not have a hurtful influence on the human organism.

[R. D.]

REVUE DE CHIRURGIE.
NOVEMBER, 1907.

1. *FRENCH CONGRESS OF SURGERY. (*Twentieth Session Held at Paris, Oct. 7–12, 1907.*)
2. *PROCEEDINGS OF THE THIRTY-SIXTH CONGRESS OF THE GERMAN SOCIETY OF SURGERY. (*Held at Berlin, April 3–6, 1907.*)

1. X-ray treatment of malignant disease is believed by Béclère to be of great value, especially for epitheliomata of the face. His optimism is questioned in the discussion, but supported by Imbert and Dupeyrac, who report 80% of cures in cutaneous cancer. Pozzi recommends the use of high frequency sparks, which he thinks preferable to x-ray in all accessible forms of malignant disease. The dangers of over-exposure to x-ray are emphasized, and in general radiotherapy is deemed of secondary value to surgery, except in cancer of the face. Its use is advised, however, in inoperable cases and as a means of preventing recurrence following operation, though several disapprove of leaving open, for the latter purpose, wounds that might otherwise be closed.

Reports and discussion of nerve, muscle and tendon transplantation in the treatment of paralyses add little to our present knowledge and practice on the subject.

The relation of trauma to malignant neoplasm and local tuberculosis is considered, with the conclusion that though a single injury may call attention to or accentuate the development of a previously existing lesion, or afford the site for a direct inoculation of tuberculosis, it is rarely the immediate occasion of malignant or tuberculous disease, and even then cannot be called an etiologic cause. Sarcoma follows trauma more commonly than does cancer. These considerations are of obvious medico-legal importance in expert testimony in damage suits.

2. Reports on progress in thoracic surgery emphasize the value of the pneumatic chamber. By operating under a negative pressure of 3 mm. of mercury, Sauerbruch found that suture of the heart for trauma could be done with less hemorrhage and greater ease, on account of cardiac quiescence. Friedrich employs a negative pressure of 3 to 8 mm for all intra-thoracic procedures to avoid pneumothorax. Seidel, on the contrary, when pneumothorax already exists, employs a slight positive pressure to prevent the establishment of atelectasis.

[R. M. G.]

Exploratory Puncture of the Brain. Neisser's brain puncture constitutes an important advance in the diagnosis of certain diseases of the brain and its membranes. POLLACK (*Mitt. a. d. Grenzg. d. Med. u. Chir.*, Bd. 18, Heft 1, p. 1) reports further results obtained with this method in Neisser's clinic, and reviews the literature. The skull and soft parts are rapidly punctured under local anesthesia, by means of a small electric drill. The exploratory needle is introduced through this opening and aspiration is performed at any desired distance from the inner surface of the skull. The procedure is not accompanied by shock or unpleasant after-effects, provided that the rules laid down by Neisser and Pollack (*same journal*, Bd. 13, p. 807) are followed. The puncture can be repeated, if necessary, several times in different places at one sitting. By this method, it is possible to localize brain tumors and abscesses accurately, and thus needless trephining may be avoided. In inoperable brain tumors, by puncture of the lateral ventricles, the symptoms of pressure may be relieved often more efficaciously than by decompression operations, and the method has not the danger attendant on lumbar puncture in such cases. The latter, as is well known, may entirely fail to relieve the pressure symptoms, owing to a blocking off of the communication between the cerebral and spinal cavities, and has, moreover, been followed by sudden death in quite a few instances. In cases of extradural hemorrhage, it is sometimes impossible to tell by the usual methods on which side of the head the lesion is, and life is sometimes lost by trephining on the wrong side. The exploratory brain puncture in such cases is invaluable, and may, as in the case reported by the author, suffice to effect a cure after the aspiration of the blood. It is to be hoped that this method will receive a more general trial than it has yet had.

[W. T.]

Correspondence.

LETTER FROM PARIS.

(From our Special Correspondent.)

ASCENDING AND DESCENDING PROCESSES.

PARIS, Dec. 10, 1907.

Mr. Editor: I must own up to being rather partial to an iconoclast, especially to one who is thoroughly convinced, and makes a clean sweep of things He is apt to be a young man, who, finding that the ground has been pretty well gleaned by his predecessors, and that entirely new ideas are scarce, realizes that, in order to come to the front, he must resolutely overthrow by force some portion of the already existing order of things.

So he walks boldly into your lot, makes disparaging remarks about the shanty in which you have lived so long and been quite content, and finally, with a vigorous shove, sends the entire edifice to the ground. After which he invites you to step over into his lot to see how far superior the building he has just put up is to the ruined structure you have left behind.

This sort of treatment is the best possible mental gymnastics for the man who is beginning to get on in life. There is no better test for the elasticity and activity of the protoplasmic prolongations of his big pyramidal cells than, just when they have comfortably settled down into ruts, and have become accustomed to certain modes of action and to ideas following each other in a well-known sequence, to be obliged at a moment's notice, not only to adopt an entirely new habit of life, but to completely shake off the old one as well,— not always the easiest matter in the world!

Osler says somewhere, that "it is a horrible thought, but very true, that we reach a stage in life, some earlier, some later, in which a new truth, a perfectly obvious truth, cannot be accepted." Well, so far as I am personally concerned, it is a satisfaction to me to find that in this respect I am all right, for the present, at any rate. For I am quite prepared to accept the following revolutionary doctrines, if they prove capable of clinical demonstration; they are, to say the least, very attractive.

Two young iconoclasts over here, former internes, Lemierre and Abrami, have recently advanced the following new ideas as regards the biliary complications of typhoid fever, — at least so they have seemed to me.

Not so very long ago, most people held that typhoid fever was due to a microbe that gained access to the intestine with the ingesta, that multiplied therein with great facility and that set up, first, local catarrh with inflammation of Peyer's patches, and, later on, systemic infection and intoxication. In the cases in which the disease was accompanied or followed by catarrhal or inflammatory disturbances of the passages of the bile and gall bladder, these accidents were held to be due to an *ascending* infective process from the intestine, occurring when the composition of the bile or the facility of its flow was not in a normal state.

These conceptions seemed to be rational; they held together fairly well, and everybody was satisfied.

But on closer scrutiny some features were brought to light that rather jarred in the tableau. Thus, the characteristic lesions of the intestine in typhoid fever are found at the lower end of the ileum, far away from the bile apparatus, in the neighborhood of which the mucosa is usually in a perfectly normal state. This detail did not seem to fit in well with the idea of an ascending infection. Again, the urine was discovered to be swarming with Eberth's bacilli, eliminated by the kidneys. Now there could be no question of any ascending infection here, the bacilli being brought to the renal filter by the circulation. Furthermore, it was ascertained that at post-mortems after typhoid fever, the bile in the vesicle is filled with Eberth's bacilli in a state of pure culture, although there had been no clinical signs of cholangitis or cholecystitis, and although the vesicle and ducts were macroscopically perfectly healthy. Doubts then began to arise as to the soundness of our belief that typhoid fever was an intestinal affair, an enteritis; and on different sides experimentors set to work to study this question of the presence of these bacilli in the bile.

With the progress of microscopic technic, an important discovery was soon made: that from the start of the disease, the specific bacilli can be demonstrated in abundance in the circulation. This at once changed the entire aspect of affairs, and the theory was advanced that the disease is primarily a septicemic process and not an enteritis!

If, now, we apply this idea to what we know of typhoid fever, we must interpret its phenomena as follows: the bacilli, arriving with the ingesta, penetrate at once into the circulation and there begin to multiply. Reaching the liver and kidneys with the blood they are eliminated in the urine and bile, in the latter of which, an excellent culture medium, they increase rapidly in numbers. In most cases their presence in these liquids is quite silent; in a few they give rise to cystitis, or cholecystitis, the two processes being of exactly the same nature, being both *descending* lesions and no longer ascending, in the case of the bile passages.

The intestinal endanthema, on this theory, is not due to the presence and direct action on the mucosa of the bacilli, but is a localized metastasis of the Eberth septicemia. Typhoid fever is, then, no more an intestinal disease than variola is a cutaneous one, — the external eruption of the one and the intestinal patches of the other being neither the seat of the virus nor the essense of the disease. Lastly, with this interpretation of the disease, the bacilli that can be demonstrated in the stools came from hepatic elimination and multiplication, and not from intestinal culture.

It is certainly trying to the ordinary mortal to have his venerable beliefs knocked about in this ruthless fashion. It all seemed so plausible: the ascending infection of the bile passages, like surgical urinary infection from bladder to kidney, or sexual infection from urethra to testicle; and yet, it cannot be gainsaid that the new theory appeals to the mind strongly. Furthermore, it has been demonstrated beyond doubt, experimentally, that bacilli can easily pass from the circulatory current into the bile. Incidentally, it may be remarked that this idea of *descending* infection may upset the entire chapter of the diseases of the bile passages; so that our troubles with this obscure region of the economy are not yet approaching an end, by any manner of means!

"Spectator."

P. S. As the true physician should be eclectic, and be on the lookout for good things, no matter how humble their origin, I send the following therapeutic tip just received in a letter from a London hospital-trained nurse, now serving in Johannesburg, South Africa:

"A Boer woman in my ward gave birth to twins, one of which had slight jaundice. She told me she had always given her babies *lice* as a remedy for this, three being the dose for an infant and ten for an adult, between two slices of bread and butter. In reply to my question as to where she got them, she answered that the Kaffir servant always supplied them, either off his body or out of his hair."

This somewhat enables one to rise to the height of grasping the tales of horror related by the English physicians who had to serve among the Boer women and children in the concentration camps, during the South African war, in explanation of the fearful mortality among the Boer sick!

WALKING AND HEALTH.

Boston, Dec. 23, 1907.

Mr. Editor: The excellent editorial, "Walking and Health," which appeared in your issue of Dec. 12, calls deserved attention to a subject of importance. Weston's extraordinary walk at the age of sixty-nine is of all the greater value from a medical standpoint, because it was done under normal and natural conditions. Most records in athletics are created and often under abnormal conditions; but Weston wore ordinary clothes and walked over ordinary country roads, the cinder track and racing costume being conspicuous by its absence. It was, therefore, a performance which with practice may be imitated though not equalled by both sexes and all ages.

Two aspects of this extraordinary walk deserve particular attention; in the first place, it demonstrates the heretofore incredible possibilities of the physical powers of what is ordinarily considered old age; it sets a new final standard of these possibilities which recalls in some particulars the demonstration of the new minimum physiological diet which Chittenden has recently given to physiologists; both of these new standards overturn others which had been established and accepted for years. Unless one has tried to walk more than forty miles in a single day under favorable conditions it is not possible to fully appreciate what it means to average 50 miles on a series of successive days under unfavorable conditions. The fact that it can be done and without serious harm should encourage all healthy folk to extend their mental picture of their walking powers. For us in Boston, our superb park system and the attractive surrounding country invite the walker to unusual delights; they should be more extensively appreciated and utilized; without doubt, for us, walking is the simplest, the most enjoyable, the most easily available form of general exercise for the conservation of health. The automobile and the electric car must not be allowed to banish it.

A second aspect of walking is its great possibility as a therapeutic agent in convalescence from sickness, surgical operations and debilitated or neurasthenic conditions of all sorts.

It must, however, be more carefully considered and prescribed; in a word, more accurately administered than has heretofore been the case. A comparison is suggested between the use of water as carried out at medical baths, and walking as it might be practiced in the open air: the careful consideration of temperature, force, character of the application of the water in one case corresponds to the speed, duration, distance and character of the country to be covered by the walk. Viewed from this standpoint, walking offers almost unlimited possibilities to the patient. It is the modern custom to discharge surgical patients from our hospitals at an early date, before returning to their occupations, which are often tedious and arduous; something more than simple rest is desirable. Walking can fill this place more effectively and acceptably than the usual artificial exercises. This is particularly true in the case of abdominal scars, and operations for the relief of hernia. Carefully considered, walking is ideal for strengthening such scars, and accustoming them gradually to the strains which they must ultimately bear. It is also valuable as an immediate treatment of sprains of a moderate degree, as Weston himself demonstrated; it is better than most forms of formal gymnastics and "setting up" drills, for children and adults with weak backs, round shoulders and flabby muscles generally. Finally as a means of severe physical exercise it may be combined with climbing on the one hand and running on the other, to both of which it is intimately related; it may be utilized to produce the maximum exertion which can be demanded within physiological limits. Let us hope that it will be utilized more extensively in these various ways.

Truly yours,

J. B. Blake, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 14, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	9	2
Chicago	—	—	Waltham	13	2
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	11	1
Baltimore	—	—	Brookline	6	1
Cleveland	—	—	North Adams	7	2
Buffalo	—	—	Chicopee	4	2
Pittsburg	—	—	Northampton	7	1
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	7	—
Washington	—	—	Leominster	5	—
Providence	—	—	Hyde Park	3	1
Boston	298	75	Melrose	10	1
Worcester	42	15	Newburyport	—	—
Fall River	34	15	Woburn	5	—
Cambridge	30	5	Marlboro	4	0
Lowell	43	14	Westfield	4	1
Lynn	29	7	Peabody	—	—
New Bedford	19	8	Revere	4	—
Springfield	23	3	Attleboro	0	—
Lawrence	24	8	Clinton	7	3
Somerville	29	3	Adams	1	—
Holyoke	20	5	Gardner	2	—
Brockton	4	2	Milford	3	—
Malden	8	1	Watertown	4	0
Chelsea	21	3	Plymouth	—	—
Salem	15	4	Weymouth	7	1
Newton	6	—	Framingham	5	1
Haverhill	10	1	Southbridge	1	—
Fitchburg	11	2	Wakefield	—	—
Everett	6	1	Webster	—	—
Taunton	16	4			

APPOINTMENTS.

FREDERICK H. VERHOEFF, M.D., has been appointed instructor in Ophthalmic Pathology at the Harvard Medical School.

RICHARD DEXTER, M.D., has been appointed an assistant in Clinical Medicine at the Harvard Medical School.

NATHANIEL R. MASON, M.D., has been appointed an assistant in Obstetrics and Gynecology at the Harvard Medical School.

EXAMINATION.

PHYSICIAN (MALE). INDIAN SERVICE. — The United States Civil Service Commission announces an examination on Jan. 15, 1908, at certain designated places, to secure eligibles from which to make certification to fill vacancies as they may occur in the position of physician (male) in the Indian Service, at salaries ranging from $720 to $1,200 per annum.

Seven hours will be allowed for this examination.

Age limit, twenty-five to fifty-five years on the date of the examination.

Men only will be admitted to this examination.

This examination is open to all citizens of the United States who comply with the requirements.

Applicants should at once apply to the United States Civil Service Commission, Washington, D. C.

SOCIETY NOTICES.

THE NORFOLK DISTRICT MEDICAL SOCIETY. — A meeting for scientific improvement will be held at Masonic Temple, 171 Warren Street, Roxbury, on Tuesday evening, Dec. 31, 1907, at 8 o'clock. Practical questions concerning mental diseases: Emergency Cases of Mental Disease, Responsibility of the Physician Called, Sources of information, Dr. William Noyes. Conditions Likely to be Mistaken for Insanity, Dr. Edward B. Lane. Some Forms of Insanity Likely to be Overlooked, Dr. Miner H. A. Evans. Some Borderline Considerations, Dr. Daniel H. Fuller. The discussion will be opened by Dr. H. R. Stedman, Dr. C. G. Dewey, Dr. L. A. Roberts. Light refreshments will be served. WILLIAM H. ROBEY, JR., *Secretary.*

A PROPOSED NEW ENGLAND PEDIATRIC SOCIETY. — The Visiting Staff of the Boston Floating Hospital request all those interested in the formation of a New England Pediatric Society to meet at the Boston Medical Library, 8, The Fenway, Saturday, Jan. 4, 1908, at 8.15 P.M. It is hoped that this movement will excite general interest and that the attendance at the meeting will not be limited to those working along this special line.

JOHN LOVETT MORSE, *Chairman.*
WILLIAM E. FAY.
ARTHUR WILLARD FAIRBANKS.
CHARLES W. TOWNSEND.
HENRY I. BOWDITCH, *Secretary.*

RECENT DEATHS.

DR. W. WALTON WOOLSEY WINTHROP, a descendant of Governor John Winthrop, of Massachusetts, died in New York on Dec. 21. He served as a surgeon for two years in the Civil War, and after that spent most of his time in traveling. He made many trips around the world, and was well known in London and Paris, where for years he made his headquarters.

DR. JOSEPH EVERETT GARLAND, M.M.S.S., one of the most prominent physicians in Eastern Massachusetts, died in Gloucester, Dec. 16, 1907, aged fifty-six years, where he has practiced for many years. On the day of his funeral the schools were closed and flags on public buildings were placed at half mast.

DR. CHARLES H. BAILEY, a prominent practitioner of Bloomfield, N. J., died on Dec. 18, from cerebral apoplexy. He was a son of the Hon. Alexander Hamilton Bailey, of Utica, N. Y., who succeeded Roscoe Conkling as a member of Congress from that district when Mr. Conkling was elected to the United States Senate. As a young man he served in the Civil War. He studied medicine in Geneva and New York, and was graduated from the College of Physicians and Surgeons, New York. When the Mountainside Hospital at Montclair was organized, twenty years ago, he became one of the attending surgeons, a position which he retained up to the time of his death, and for many years he was president of the medical board of the hospital. He also served at one time as president of the local board of health. He had practiced in Bloomfield for thirty-seven years.

DR. SAMUEL PRESTON CROPPER, of New York, died, after a long illness, on Dec. 19. He was sixty years of age, and was graduated from the College of Physicians and Surgeons, New York, in 1877.

ELMER ELLSWORTH GOODWIN, M.D., M.M.S.S., died in Haverhill, Dec. 18, 1907, aged forty-two years.

BOOKS AND PAMPHLETS RECEIVED.

Modern Medicine. Its Theory and Practice. In Original Contributions by American Authors. Edited by William Osler, M.D., assisted by Thomas McCrae, M.D. Vol. III. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Blakiston's Quiz-Compends. Compend of Surgery for Students and Physicians. By Orville Horwitz, B.S., M.D. Sixth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Second Annual Report of the Associated Committees of the Massachusetts Medical Society for the Prevention and Control of Tuberculosis. 1907.

Truth and Poetry Concerning Uric Acid. By Lewellys F. Barker, M.D. Reprint.

Oxford Medical Publications. The Operations of General Practice. By Edred M. Corner, M.A., M.C., M.B. (Cantab.), B.Sc. (London), F.R.C.S. (England), and H. Irving Pinches, M.A., M.B., B.C. (Cantab.), M.R.C.S., L.R.C.P. (London). Illustrated. London: Henry Frowde; Hodder & Stoughton. 1907.

Rabies, Its Place amongst Germ-Diseases, and Its Origin in the Animal Kingdom. By David Sime, M.D. Cambridge: University Press. 1903.

A Treatise on Plague, Dealing with the Historical, Epidemiological, Clinical, Therapeutic and Preventive Aspects of the Disease. By W. J. Simpson, M. D. Aberd., F.R.C.P. Lond., D.P.H. Camb. Illustrated. Cambridge: University Press. 1905.

A History of Nursing. By M. Adelaide Nutting, R.N., and Lavinia L. Dock, R.N. Illustrated. Vols. I and II. New York and London: G. P. Putnam's Sons. 1907.

Oxford Medical Publications. Surgical Emergencies. By Percy Sargent, M.A., M.B., B.C. (Cantab.), F.R.C.S. London; Henry Frowde; Hodder & Stoughton. 1907.

Oxford Medical Publications. Practical Anesthetics. By H. Edmund G. Boyle, M.R.C.S., L.R.C.P. Illustrated. London: Henry Frowde; Hodder & Stoughton. 1907.

Oxford Medical Publications. Prostatic Enlargement. By Cuthbert S. Wallace, M.B.B.S. (London), F.R.C.S. (England). Bacteriology. By Leonard S. Dudgeon, M.R.C.P. (London). Illustrated. London: Henry Frowde; Hodder & Stoughton. 1907.